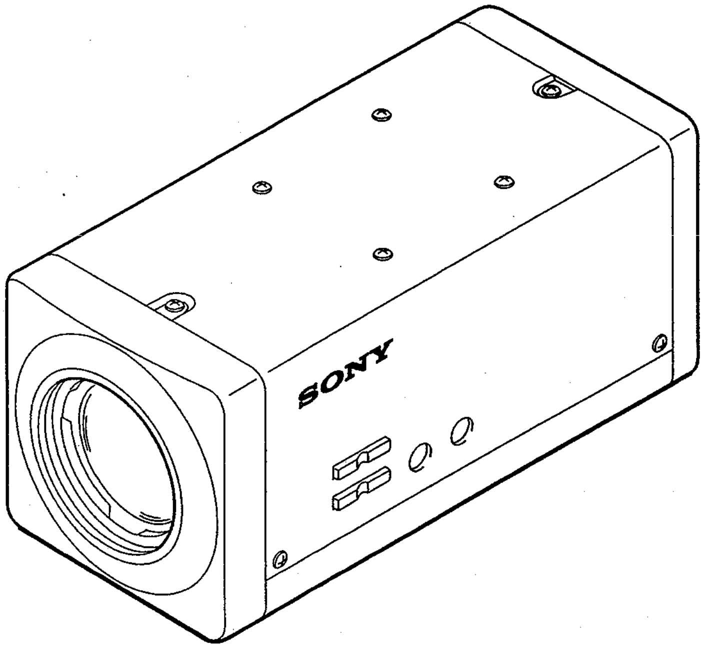
SONY

COLOR VIDEO CAMERA

SSC-CX34/34P

SERVICE MANUAL



Hyper HAD™

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SAFETY RELATED COMPONENT WARING

Components identified by shading and ⚠ marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

SECTION 1
GENERAL

This section is extracted from instruction manual.

SONY

Color Video Camera

Operating Instructions

Before operating the unit, please read these instructions thoroughly and retain them for future reference.

Mode d'emploi

Avant de faire fonctionner cet appareil, lisez attentivement le présent mode d'emploi et conservez-le pour toute référence ultérieure.

Manual de instrucciones

Antes de utilizar la unidad, lea las instrucciones con atención y consérvelas para su consulta en el futuro.

Hyper HAD™
SSC-CX34/34P

Sony Corporation © 1997 Printed in Japan

Owner's Record

The model and serial numbers are located on the bottom.
Record these numbers in the spaces provided below.
Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No.____________________ Serial No. ________________

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

The glaphical simbol is on the unit.
This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For the customers in the U.S.A. (SSC-CX34 only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device requires shielded interface cable to comply with FCC emission limits.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

AVERTISSEMENT

Afin d'éviter tout risque d'incendie ou d'electrocution, ne pas exposer cet appareil à la pluie ou à l'humidité. Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

ADVERTENCIA

Para evitar incendios o el riesgo de electrocución, no exponga la unidad a la lluvia ni a la humedad.
Para evitar descargas eléctricas, no abra la caja.
En caso de avería, solicite asistencia técnica a personal cualificado.

Features

This SSC-CX34/34P color video camera is equipped with a 1/3 inch Hyper HAD™ (Hyper Hole-Accumulated Diode) CCD (Charge Coupled Device), and also has the following features:

- ×12 zoom lens
- High sensitivity (Minimum illumination: 4.5 lux, F1.8)
- Automatic white balance tracking and adjustment (normal/PRO)
- Aperture level switchable (Normal/Sharp)
- Lens control using external devices (± 12 V/± 6 V)
- Preset functions using external control device
- Auto iris lens
- Automatic backlight compensation through Smart Control™ (operates when BLC switch is in the "ON" position)
- Line lock function for synchronizing through AC power source

* Hyper HAD and Smart Control are trademarks of Sony Corporation.

Notes on Use

Power supply

The SSC-CX34/34P must always be operated with a 24V AC class 2 power supply. In the U.S.A, use a Power supply which is UL Listed. In Canada, use a power supply which is CSA Certified.

Handling

Be careful not to spill water or other liquids on the unit, or allow combustible or metallic objects to fall inside the body. If used with foreign matter inside, the camera is liable to fail, or be a cause of fire or electric shock.

Operation and storage locations

Avoid aiming the camera at very bright objects such as the sun or electric lights for an extended period. Avoid operating or storing the unit in the following locations.

- Extremely hot or cold places (operating temperature –10°C to + 50°C (14°F to 122°F)
- Where it is subject to strong vibration
- Close to generators of powerful electromagnetic radiation such as radio or TV transmitters.
- Where it is subject to fluorescent light reflections
- Where it is subject to unstable (flickering, etc.) lighting conditions.

Care of the unit

- Remove dust or dirt on the surface of the lens with a blower.
- Use a dry, soft cloth to clean the body. If it is very dirty, use a cloth dampened with a small quantity of neutral detergent, then wipe dry.
- Avoid using volatile solvents such as thinners, alcohol, benzene, and insecticides. They may damage the surface finish and/or impair the operation of the camera.

Other

When BLC is in the "ON" position, "hunting" may occur, that is, the image may get darker and lighter as the camera "hunts" for the best exposure level. If hunting occurs, set the BLC switch to "OFF."

In the event of any problems with the operation of the camera, contact your Sony dealer.

CCD Characteristics

The following conditions may be observed when using a CCD camera are not due to any fault within the camera.

Vertical smear

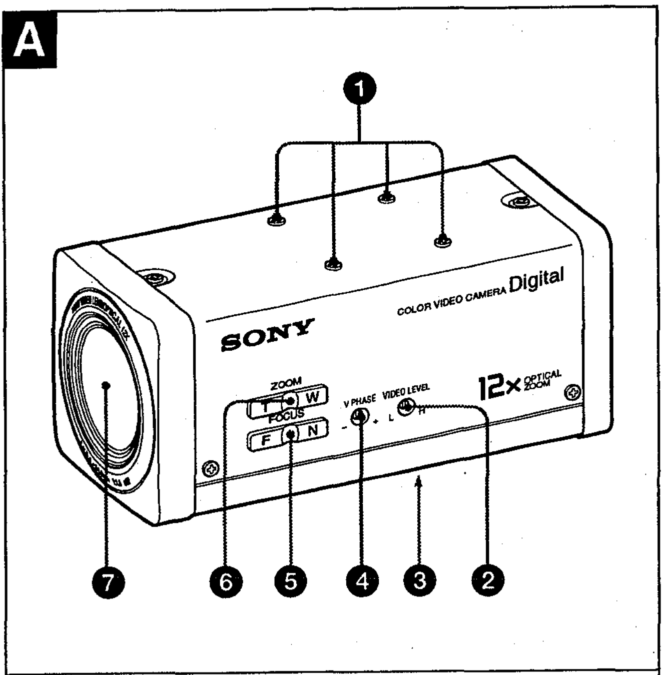
This phenomenon occurs when viewing a very bright object.

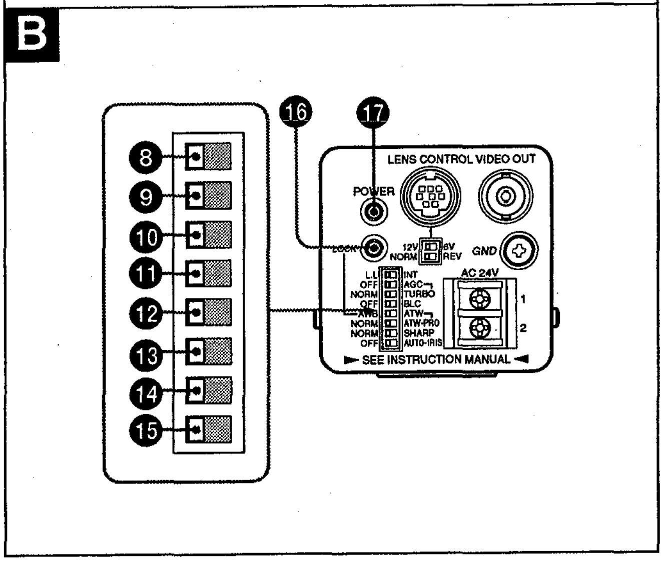
Patterned noise

This is a fixed pattern which may appear over the entire monitor screen when the camera is operated a high temperature.

Jagged picture

When viewing stripes, straight lines, or similar patterns, the image on the screen may appear jagged.





Location and Function of Parts

Top/Front/Side/Bottom Illustration A

① Mounting screws of Tripod adapter (supplied)
The tripod adapter supplied with the camera can be attached when necessary to the top of the camera. Use these four screws to attach the tripod adapter.

② Video level adjustment switch
Adjusts the signal level for the auto iris lens.

③ Sunken tripod adapter (bottom)
Use 1/4" UNC-20 screws (4.5 ±0.2 mm) to attach the tripod.

④ V-phase (vertical-phase) adjustment switch
Adjusts any misaligned vertical phase with other cameras, when using this camera with the SYNC switch ⑧ in "L.L (line-lock)" mode.

⑤ Focus button
Press the "N (near)" side to focus on closer objects and the "F (far)" side to focus on farther objects.

⑥ Zoom button
Press the "W" side to obtain a larger angle of view and "T" side to have a smaller angle of view.

⑦ Built-in zoom lens

Rear B

⑧ SYNC switch
Use this switch to set the camera synchronization mode—line lock (L.L) or internal (INT).

⑨ AGC (automatic gain control) ON/OFF switch
The automatic gain function automatically adjusts picture gain in accordance with the brightness of the subject.

⑩ Gain up switch
Switching the Gain up switch to the TURBO mode while the AGC switch ⑨ is on increases gain by up to 6dB over the NORM (normal) mode.

⑪ BLC (back lighting compensation) ON/OFF switch
When switched on, this function adjusts exposure to compensate for situations where the subject is lit from behind.

⑫ White balance mode switch
AWB (auto white balance) position; enables use of the AWB lock button ⑯. At this position, the latest ATW value remains applied.
ATW (auto tracing white balance) position; automatically adjusts white balance to suit changes in the color temperature of the lighting source. This mode is especially effective for color temperatures in which the ATW-PRO white balance function does not work.

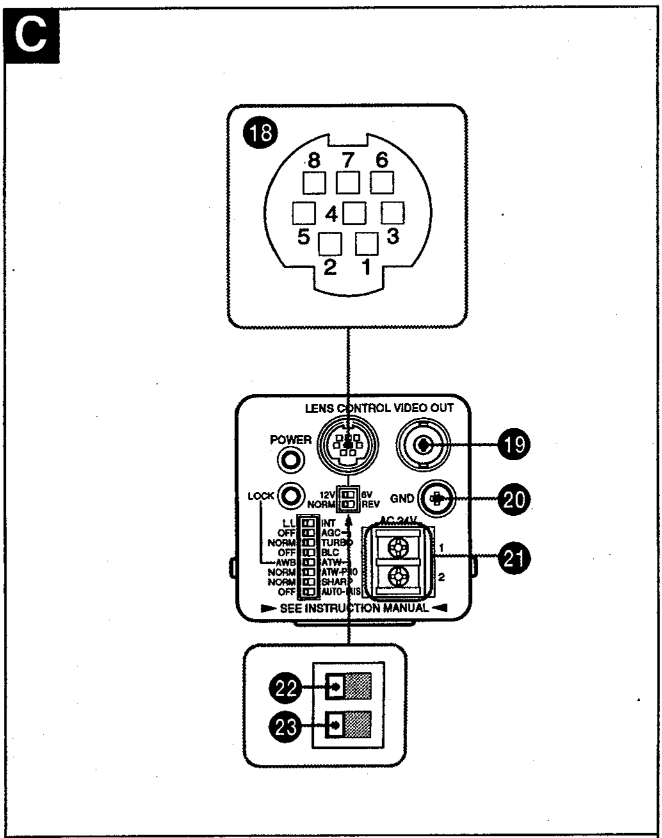
⑬ ATW (auto tracing white balance)-PRO switch
Automatically adjusts white balance to suit changes in the color temperature of lighting sources such as fluorescent, incandescent and natural lighting.

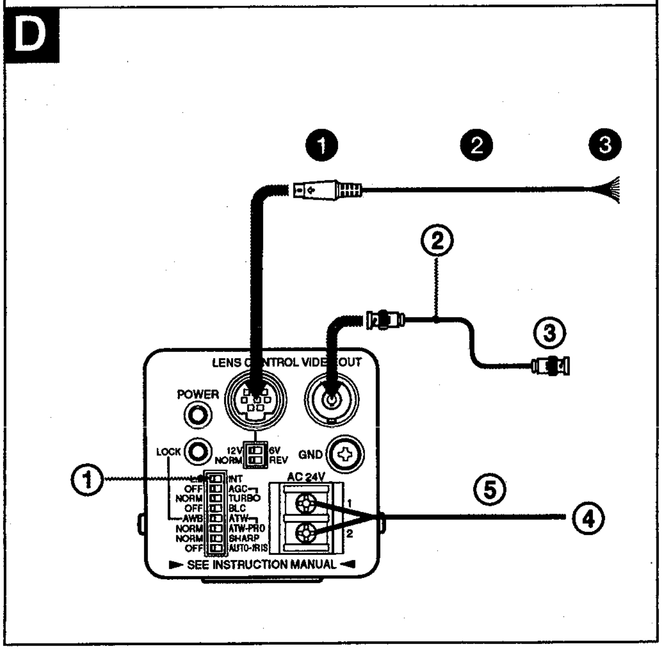
⑭ Aperture switch
Set in the "SHARP" mode to sharpen the outline and produce a clearer picture.

⑮ Auto iris ON/OFF switch
Activates the auto iris when set to the AUTO-IRIS side.

⑯ AWB (auto white balance) LOCK button
Set the white balance mode switch ⑫ to "AWB", then press this button when the entire monitor screen is occupied by a white object. The camera will automatically adjust white balance in accordance with the color temperature of the lighting source.

⑰ Power indicator





Rear C

⑱ Lens control connector
To control the lens (focus, zoom, and iris) externally, connect the cable supplied with the camera to this connector.
The pin numbers of this connector, the color-coding of the cable, and the corresponding input/output signals are as shown in the below table. Identify the colored conductors of the cable prior to connecting them to each of the external control device terminals. (Refer to Illustration C-⑱ for pin positions.)

Pin No.	Cable colors	In/output signal
1	Red	Preset voltage input (+)
2	White	Preset voltage input (–)
3	Black	Zoom position voltage output*
4	Yellow	GND
5	Blue	Focus position voltage output*
6	Green	Focus control voltage input
7	Brown	Zoom control voltage input
8	Gray	Iris control voltage input

* **SSC-CX34:** When the zoom position is moved to the "W (wide-angle)" side, the positional output voltage increases; when it is moved to the "T (telephoto)" side, the voltage decreases.
SSC-CX34P: When the zoom position is moved to the "T (telephoto)" side, the positional output voltage increases; when it is moved to the "W (wide-angle)" side, the voltage decreases.
SSC-CX34/34P: When the focus position is moved to the "F (far)" side, the positional output voltage increases; when it is moved to the "N (near)" side, the voltage decreases.

Caution

When controlling the iris externally, set the auto iris ON/OFF switch ⑮ to "OFF". Iris control using this connector will not work if the auto iris is ON.

⑲ VIDEO OUT connector (BNC)

⑳ Ground terminal

㉑ AC 24 V input terminals

㉒ 12V/6V switch
When using the lens control connector ⑱ to control the focus, zoom, and iris from an external source, set this switch to match the input voltage (±12 V or ± 6 V).

㉓ NORM/REV switch
Use this switch whether the external input voltage is + or –, to change the direction of the focus, zoom and iris movement. Use the following table for reference.

Function Voltage Switch position	Zoom		Focus		Iris	
	+	–	+	–	+	–
NORM	Wide	Tele	Far	Near	Close	Open
REV	Tele	Wide	Near	Far	Open	Close

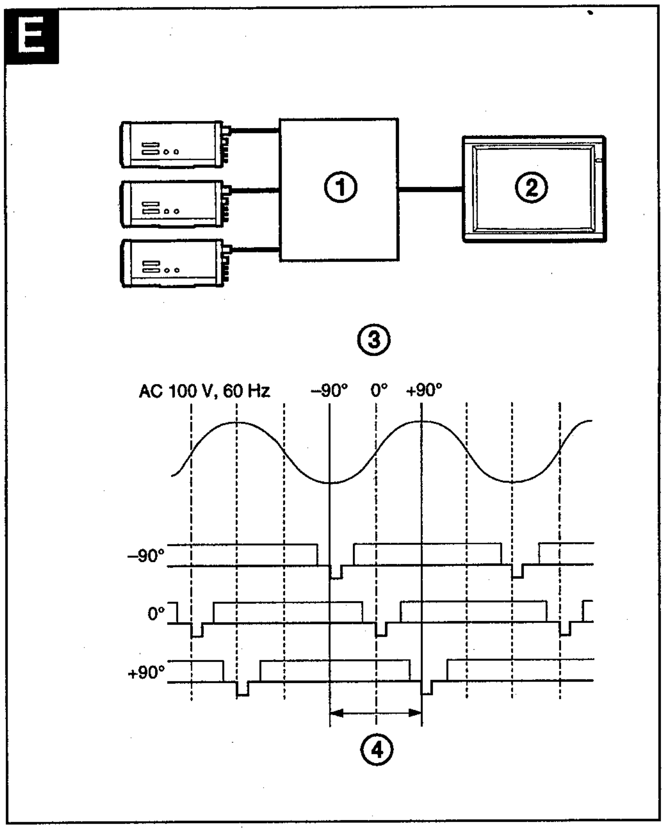
Connections D

Connect the camera to a power outlet, only after all connections have been completed.

Using an internal synchronization
① Set the SYNC switch to INT (internal synchronization).
② 75-ohm coaxial cable
③ Connect with VIDEO IN connector on a video monitor, etc.
④ to power supply (AC 24 V)
⑤ Power cord

When using the LINE LOCK mode, set the SYNC switch ❽ to L.L (line lock) and make connections as above.

When zoom, focus and the iris are controlled externally
❶ To lens control terminal
❷ Custom cable supplied with camera
❸ To external control device



Phase Adjustment E

When using more than one camera, connect to a camera switcher and set the vertical phase range as follows:

① Camera switcher
② Monitor
③ Vertical phase
④ Adjustable range

Vertical phase

The picture may roll vertically if the vertical phase is not set. To adjust the vertical phase, turn the V PHASE screw at the back of the camera.

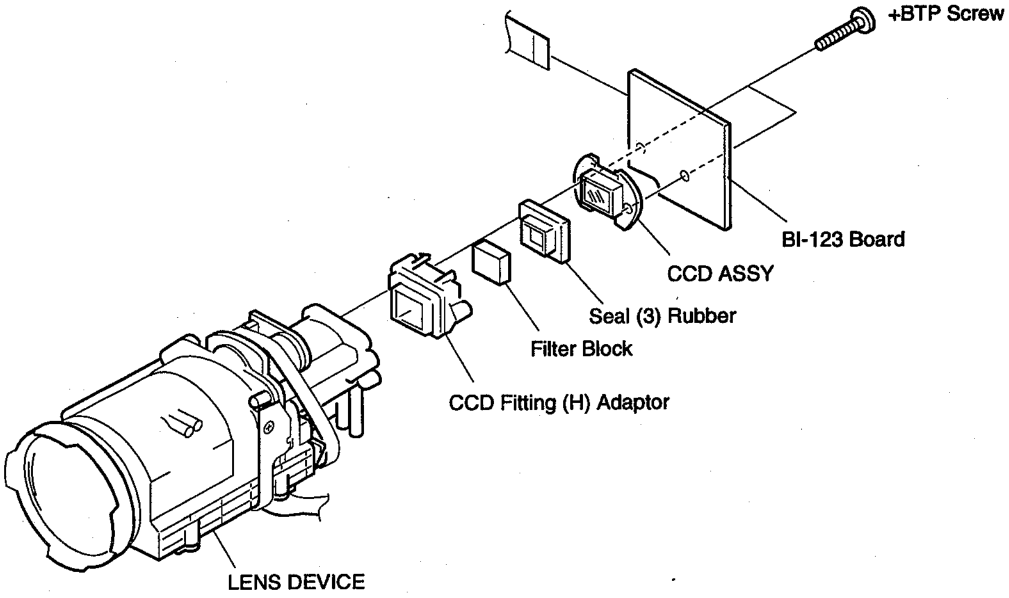
Specifications

Image device	1/3" interline transfer type CCD
Effective pixels	CX34: 768 (H) × 494 (V) CX34P: 752 (H) × 582 (V)
Signal system	CX34: NTSC color system CX34P: PAL color system
Signal process	Digital signal processor
Synchronization system	Internal/line-lock
Horizontal resolution	470 TV lines
Built-in lens	×12 zoom lens f = 5.4 mm to 64.8 mm, F1.8 to F2.7
Angle of view	H: 48.8 degrees (wide end) to 4.3 degrees (tele end) V: 37.6 degrees (wide end) to 3.3 degrees (tele end)
Shortest subject distance	10 mm (wide end), 800 mm (tele end)
Focus	Manual
Lens control	DC voltage control: ± 6 V /± 12 V (switchable) (Zoom/focus preset function by the external control device)
Control voltage polarity	Normal/Reverse (switchable)
Minimum illumination	4.5 lux (F1.8, 50 IRE, AGC: ON, TURBO: ON)
Video output	1 Vp-p, 75 Ω, Sync.: Negative
Video S/N	50 dB (Weight ON)
White balance	Switchable: ATW/ATW-PRO/AWB (one-push)
Automatic gain control (AGC)	Switchable: ON (TURBO)/ON (NORM)/OFF
Iris	Auto/manual
BLC	ON/OFF
Aperture	Switchable: NORM/SHARP
Power requirements	24 V AC
Power consumption	4.8 W
Operating temperature	–10°C to +50°C (14°F to 122°F)
Operating humidity	20% to 80%
Storage temperature	–40°C to +60°C (–40°F to +140°F)
Storage humidity	20% to 95%
Shock resistance	70 G
Mass	Approx. 520 g (1 lb 2 oz)
Dimensions	60 × 60 × 129.5 mm (2 3/8 × 2 3/8 × 5 1/8 inches) (w/h/d) (Excluding protruding parts)
Supplied Accessories	Tripod adaptor (1) Custom cable (1) Operating Instruction (1)

Design and specifications are subject to change without notice.

SECTION 2
SERVICE INFORMATION

2-1. REMOVAL OF CCD ASSY


+BTP Screw
BI-123 Board
CCD ASSY
Seal (3) Rubber
Filter Block
CCD Fitting (H) Adaptor
LENS DEVICE

2-2. EXTENSION HARNESS

- J-6431-240-A EXTENSION FLEX CABLE 14P
  (BI-123 BOARD ←→ PR-230 BOARD)
- J-6098-630-A OA-863 Extension Harness 28P
  (PR-230 BOARD ←→ PS-482 BOARD)
  (PS-482 BOARD ←→ IF-669 BOARD)

SECTION 3

OPERATIONAL DESCRIPTION

3-1. BI-123 Board

The signal (IC101 pin 8) output from the CCD imager (IC101) passes through the buffer (Q101), and it is output to the PR-231 board from CN101 pin 13. H1, H2, and V1, V2, V3, V4 pulses are CCD drive pulses supplied from the PR-231 board.

3-2. PR-230 Board

(1) Main signal processing circuits

The CCD-OUT signal (CN202 pin 13) from the BI-123 board is input to IC203 pins 25 and 26, then it is subjected to the correlative double sampling (CDS), and further it is amplified in the AGC circuit and output from the pin 8. Then, it is input to the IC209 pin 39, and A/D conversion is executed.

10 bits of A/D output (IC209 pins 1-5, 8-12) are input to the DSP CORE signal processing circuit (IC212 pins 85-94).

After digital signal processing, D/A conversion is executed, and analog Y and C output signals are attained (IC212 pin 20: Y, pin 21: C).

Y and C signals are passed through the filters [FL802: Y, FL801: C], then added and output from CN203-1pin via the amplifier [Q210] and 75Ω driver [IC226].

(CN101.13pin →) CN202.13pin → CN203.25,26pin → IC203.8pin → R217 → IC209.39pin → IC209.12 (MSB)-8,5-1 (LSB) pin → IC212.85 (MSB)-94 (LSB) pin → IC212.20,21pin

Y : IC212.20pin → Q205 → R264 → FL202 → Q207 → R282 → Q210

C : IC212.21pin → Q204 → R262 → FL201 → Q206 → R270 → C325 → Q210

Compojitor Signal : Q210 → Q212 → C340 → IC226 → C349 → R317 → CN203.1pin

(2) Microcomputer peripheral circuits

The microcomputer (IC217) sets the parameters for digital signal processing circuit (in IC212), and saves some data in the EEPROM (IC215).

Also, it makes a digital control of analog data through D/A converter (IC210).

(3) CCD drive pulse signal circuits

Receiving main clock of 28MHz, the timing generator (IC206) generates the CCD drive pulses and the pulses for sample hold.

Also, a synchronizing signal necessary for the timing generator is got from the sync. signal generator in the IC212.

(4) External sync circuits

This camera can operate in the L.L/VD-S modes.

(L.L) The V pulse (square wave synchronous with power supply) from CN204-5pin is input to a switching gate of IC223. In the L.L mode, this V pulse is selected, and it is input to the IC212-61 pin. In this IC, the phase of V pulse is compared with internal VD, and its result is output from the IC212-63 pin. This phase comparison signal is input as control voltage to 28MHz VCO (in the vicinity of IC208) through LPF on the IC227 periphery to compose the PLL.

(VD-S) External sync signal is superposed on video signal and input from CN203-1pin. These signals are clamped, then sliced in the IC224, Q214, Q218, and Q219 so as to separate the VD pulse. The separated VD pulse is finely adjusted in phase by the IC216, then input to the IC223. If VD-S sync signal is detected, the VD-S mode is activated regardless of which position the mode switch is set to, and VD pulse is input to the IC212-61pin. The subsequent operation is same as in the L.L mode.

(5) IC for detecting auto focus

IC239 is used to detect signals for auto focus control, and receiving digital 8-bit Y signal from DSP (IC212), it outputs a detection value in the preset detection range. Setting of a detection range and reading of data are executed by serial communication (IC239 2-5 pins) with the microcomputer on the IF board.

(6) Separation of superpose control signal

A circuit block consisting of Q223, 300, 301, 303, etc. separates control signals such as lens control signal superposed on video signals, and it amplifies the separated control signals by means of differential amplifier, then outputs from CN204-15pin

3-3. IF-669 BOARD

(1) Microcomputer operational overview

The 8-bit microcomputer (IC601) operates at period of VD signal input to 61 pin. It receives control signals from external devices and changes the camera mode. It notifies the camera micom (IC217) on the PR-230 board of this change through communication. It saves the conditions at the power off in the EEPROM, and it transmits them to the camera micom when the power is turned on. As external control, it controls the superpose signals, voltage, and switches.

(2) Microcomputer peripheral circuits

The microcomputer (IC601) executes internal communication with the camera micom (IC217) through 6, 7, 47, 48, 49, 50 pins to set the camera conditions. Also, it executes internal communication with the lens predriver (IC405), AF detector (IC239), and EVR (IC406) through 8, 10, 11, 13, 51, 52, 53 pins. It resets the lens and makes Hall adjustment through 12, 41, 75, 76 pins. It communicates with EEPROM through 9, 65, 66, 67, 77 pins to read and save data. It reads the mode setting information at 54, 55, 56, 57 pins. Further, it detects the power off at 60 pin and saves data at that time in the EEPROM (IC609).

(3) External voltage control circuit

External voltage control signal input from the CN603-6, 7, 8 pins is divided in voltage in the R668, 653, 652, 667, 651, 650, etc. and input to the 38, 39, 40 pins of Micom (IC601). The voltage input to the Micom is subjected to the A/D conversion internally.
The PWM signals according to the Zoom and Focus positions are output from 2 and 3 pins of Micom, and inverted in the IC611 and 612. These signals are switched on the external voltage level (CN603-1, 2 pins) and integrated in 605 and 606. After that, it is output to external devices via the buffer IC (IC614).

(4) Decoding of superpose control signal

The superpose control signal input from the CN601-5 pin is sampled by the signal generated in IC604, and converted from serial signal to parallel signal in the IC605, 606, 607, and 608. Further, it is input to 14 – 21 pins of Micom depending on the read signal at 1, 78, 79, 80 pins, then it is decoded in the Micom.

(5) Reading of switches and controls

The signals output from 22, 23, 24, 25 pins of Micom (IC601) are received at 26, 27, 28, 29 pins to read the conditions of switches arranged in matrix. The 68, 69, 70 pins read the setting position of shutter speed. The 42 and 43 pins read the voltage setting of control on the V phase and video level, then A/D conversion is executed to change the level in the Micom.

3-4. PS-482 Board

(1) Power supply circuits

External DC power (8~13V) is input, then the PWM control ICs (IC501, 502) make DC-DC conversion to generate various power supplies.
IC501 generates 5V and 3.3V for lens drive, while IC502 generates 5V, then with this 5V it generates 15V and –8.5V in the step-up circuit and supplies them to respective boards.

(2) Lens drive circuits

IC405, under control by the Micom on the IF-669 board, generates optimum pulses to drive two stepping motor drivers for focus and zoom, and IC404 drives the motors. IC402 is an operation amplifier for HALL AMP, and IC401 provides an iris driver. Further, IC406 is a D/A converter for lens control.

3-5. CT-196 Board

(1) Connectors

External input signals are transferred to respective boards. video signals from CN901 are output from CN904.
AC24V input from TB901 is sent to the AC-189 board via W901. The lens control input signals are sent to the IF-669 board via CN903. The D901 is turned on when the power is supplied.

(2) Switches

The statuses of DIP switches (SW901, 903) and tactile switch (SW902) are sent to the IF-669 board.

3-6. AC-187 Board

Using AC24V inputted from CT-196 Board, the rectifier and the DC/DC converter generate DC 17.8V.

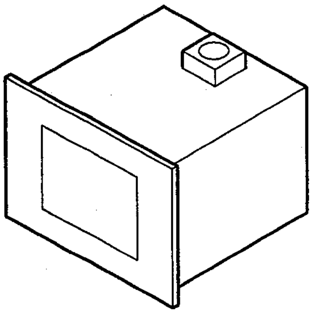
SECTION 4
ADJUSTMENT

4-1. PREPARATIONS

4-1-1. Equipment Required

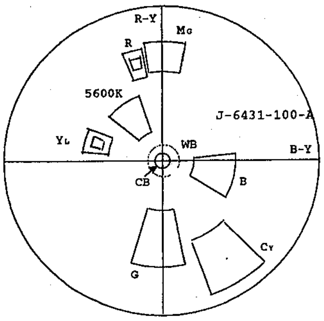
J-6029-140-B	Pattern Box PTB-500

· Light source for test chart



J-6431-100-A	Vectorscope Scale

· For color adjustment


R-Y
Mg
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5600K
J-6431-100-A
YL
WB
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CB
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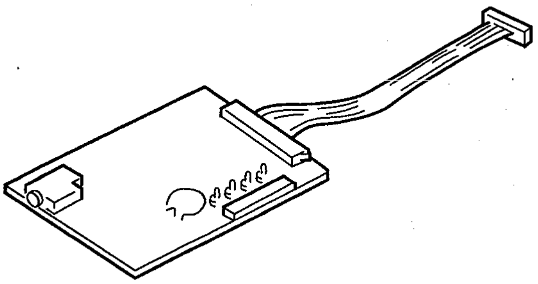
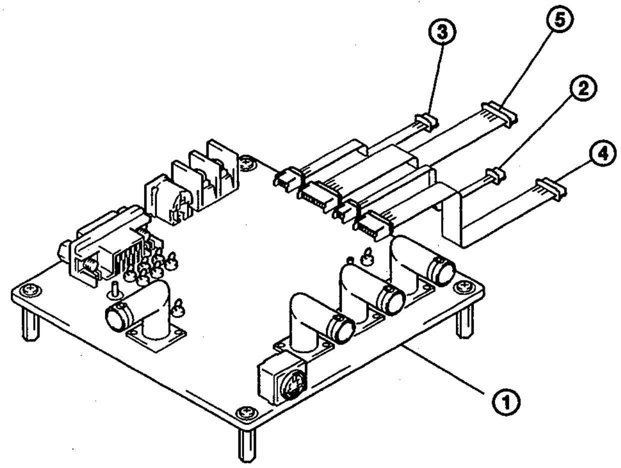
Copy the last page on a transparent sheet.

J-6430-530-A	Adjustment Commander Relay Jig

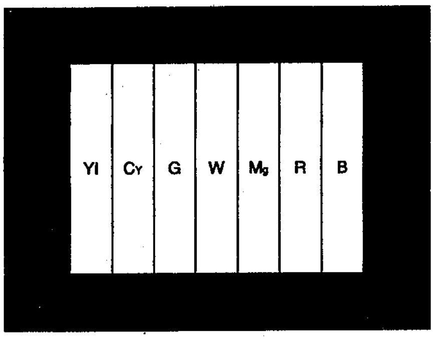


J-6431-090-A J-6431-320-A	① Jig Board for Service ⑤ IO-164 Harness 8P



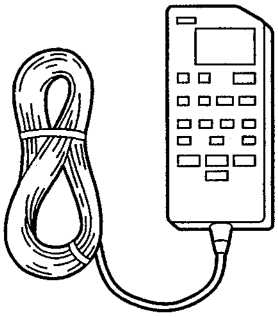
J-6020-250-A	Color Bar Chart

· For color adjustment


Yl
Cy
G
W
Mg
R
B

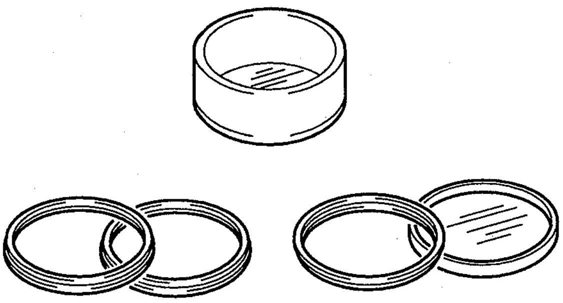
J-6082-053-B	Camera Adjustment Commander

· RM-95 partly converted

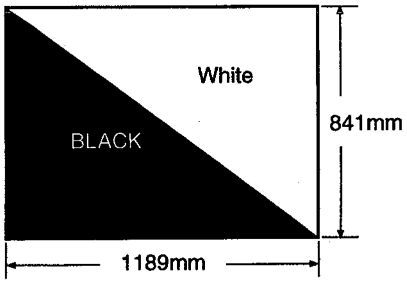


J-6080-053-A	Color Temperature Correction Filter C14

· For the confirmation after the adjustment



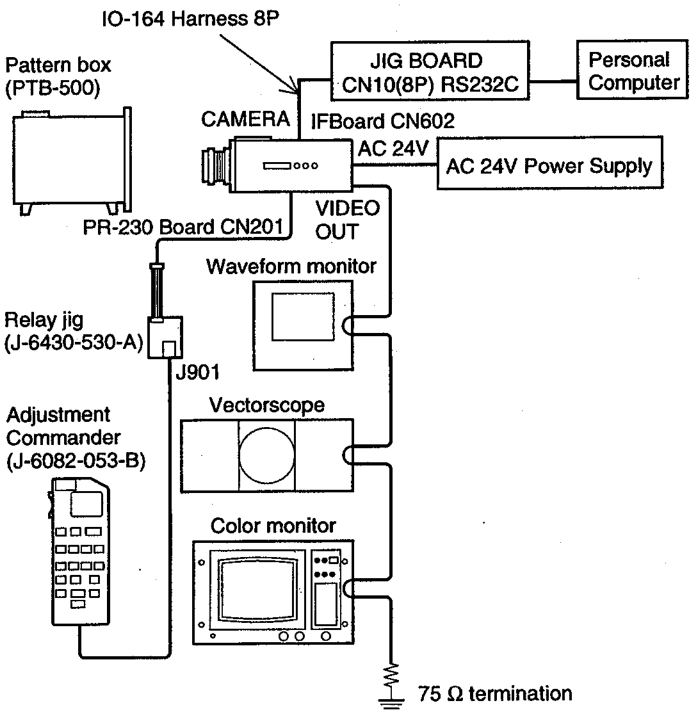
- Adjustment Software CCB_SSC Control (J-6431-340-A)
- Flange Back Adjustment Chart
  Join together a piece of white A0 size paper (1189 mm × 841 mm) and a piece of black paper to make the chart shown below.


White
BLACK
841mm
1189mm

Note: **Use a non-reflecting and non-glazing vellum paper. The size must be A0 or larger and the joint between the white and black paper must not have any undulations.**

- ND Filter
  ND25 (25%) 50 by 50 mm square, made by Kenko
  Make the transmission factor to 6.25% with double ND filter.
- Oscilloscope
- Frequency Counter
- Digital Voltmeter
- Vectorscope
- Waveform Monitor
- Color Monitor

4-1-2. Connection for Adjustment


IO-164 Harness 8P
Pattern box (PTB-500)
JIG BOARD CN10(8P) RS232C
Personal Computer
CAMERA
IFBoard CN602
AC 24V
AC 24V Power Supply
PR-230 Board CN201
VIDEO OUT
Waveform monitor
Relay jig (J-6430-530-A)
J901
Adjustment Commander (J-6082-053-B)
Vectorscope
Color monitor
75 Ω termination

4-1-3. Adjustment Software

The interface system of the camera is adjusted using the software installed in a PC (personal computer).

Name of the software

CCB_SSC Control

PC to use

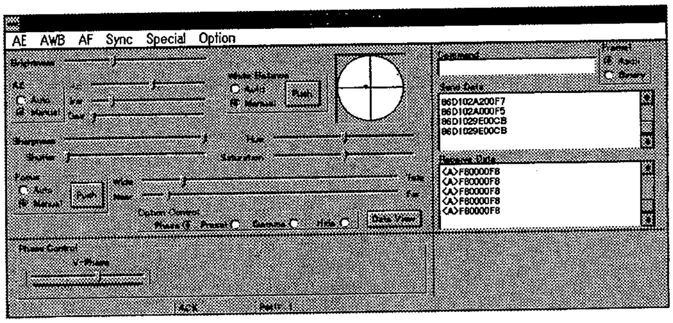
The PC in which Microsoft Windows NT3.5, 4.0 Windows 95 operates.

Installation

Double click the setup.exe from the File manager (Explorer).

Operation

1. Turn on the power of the camera and start up the windows.
2. Double click the file CCB_SSC Control icon.
3. Select the desired mode of the respective adjustment items. Perform adjustment by dragging the adjustment slider using mouse. You can also perform adjustment by the arrow mark key when you click the adjustment slider with mouse.

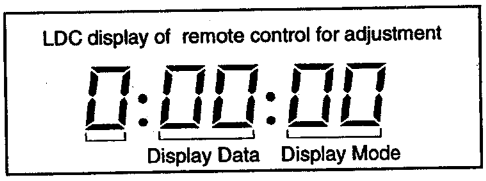

AE
AWB
AF
Sync
Special
Option
Push
Push
Data View
ACK

```
86D102A200F7
86D102A000F5
86D1029E00CB
86D1029E00CB
```

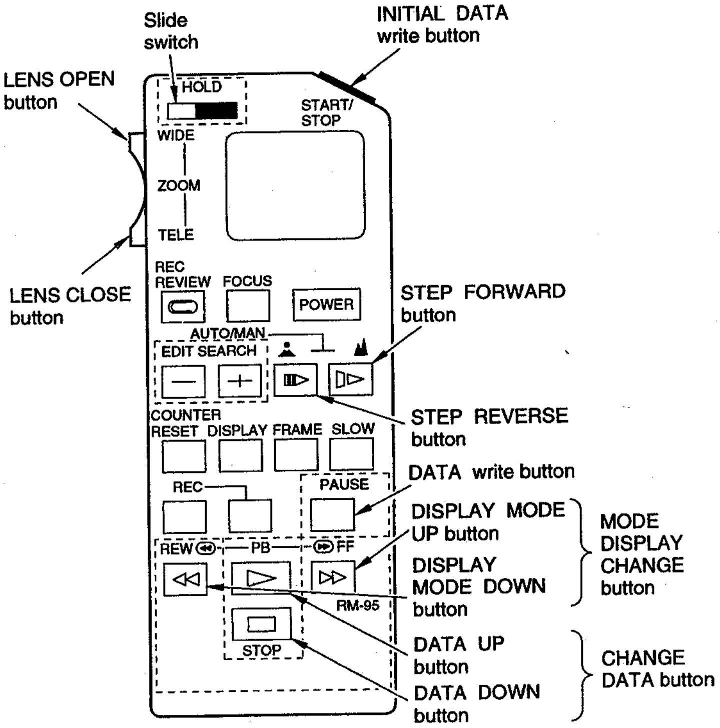
```
<A>F80000F8
<A>F80000F8
<A>F80000F8
<A>F80000F8
<A>F80000F8
```

4. Exit the adjustment software using the file menu of the window.

4-1-4. Adjustment Commander


LDC display of remote control for adjustment
0:00:00
Display Data
Display Mode

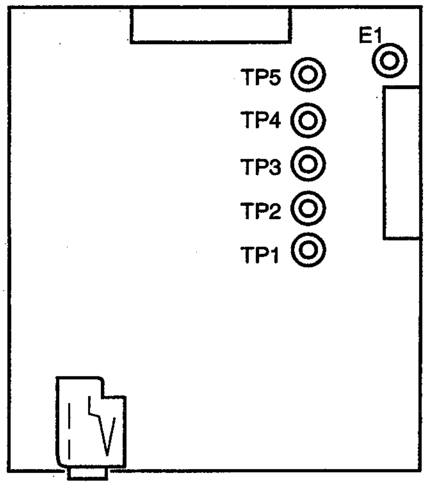
Remote control for adjustment
RM-95 (J-6082-053-B)


Slide switch
INITIAL DATA write button
LENS OPEN button
HOLD
START/STOP
WIDE
ZOOM
TELE
LENS CLOSE button
REC REVIEW
FOCUS
POWER
STEP FORWARD button
AUTO/MAN
EDIT SEARCH
COUNTER RESET
DISPLAY
FRAME
SLOW
STEP REVERSE button
DATA write button
REC
PAUSE
DISPLAY MODE UP button
DISPLAY MODE DOWN button
MODE DISPLAY CHANGE button
REW
PB
FF
RM-95
STOP
DATA UP button
DATA DOWN button
CHANGE DATA button

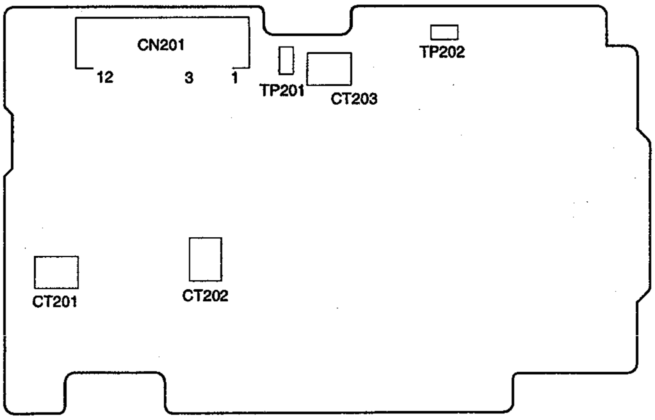
4-1-5. Terminals to Determine Signals for Adjustment

The signals required for adjustment are available at the test pins on the Adjustment Commander Relay Jig.

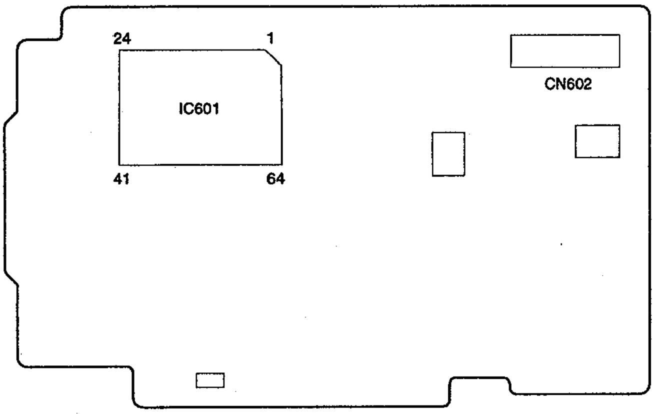
TP1: CCD LEVEL
TP2: A/D IN
TP3: V SUB
TP4: V PG
TP5: IRIS OUT
E1 : GND


E1
TP5
TP4
TP3
TP2
TP1

– Commander Relay Jig –

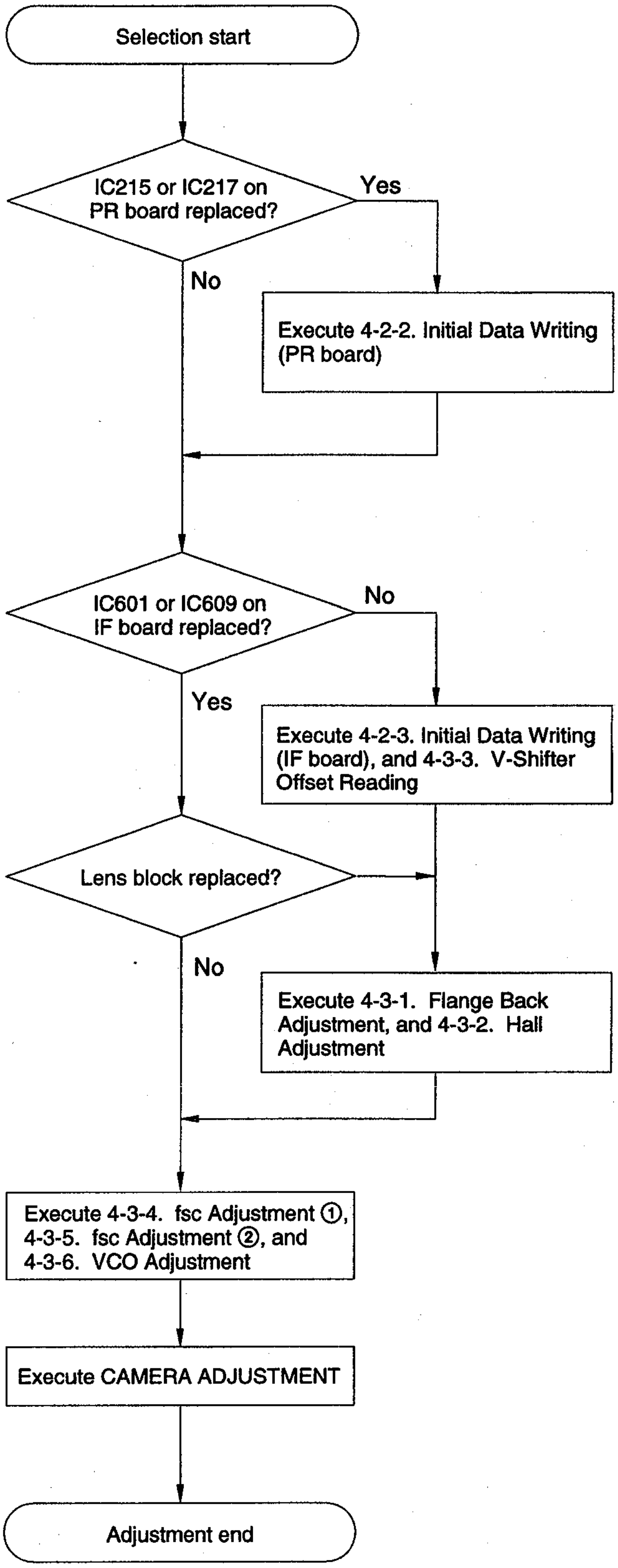

CN201
12
3
1
TP201
CT203
TP202
CT201
CT202

– PR-230 Board –


24
1
IC601
41
64
CN602

– IF-669 Board –

4-1-6. Chart to Select Items Requiring Adjustment


Selection start
IC215 or IC217 on PR board replaced?
Yes
No
Execute 4-2-2. Initial Data Writing (PR board)
IC601 or IC609 on IF board replaced?
No
Yes
Execute 4-2-3. Initial Data Writing (IF board), and 4-3-3. V-Shifter Offset Reading
Lens block replaced?
No
Execute 4-3-1. Flange Back Adjustment, and 4-3-2. Hall Adjustment
Execute 4-3-4. fsc Adjustment ①, 4-3-5. fsc Adjustment ②, and 4-3-6. VCO Adjustment
Execute CAMERA ADJUSTMENT
Adjustment end

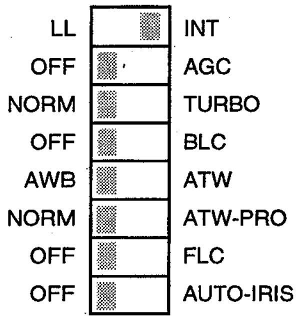
4-2. ADJUSTMENT METHOD

4-2-1. Preparations for Adjustment

(1) Turn on the camera.

(2) Setting switches:

- Set the DIP switches on the rear panel of the camera to shown as below.



- Slide the sliding switch (HOLD) in the upper part of the commander to the right side.

(3) Connecting the Commander:
Use a relay jig to connect the commander to the connector (CN201) on the PR-230 board so that the relay jig will have Pin 1 (white) coincide with Pin 1 (the front side) of the connector.

4-2-2. Writing in Initial Data (PR Board)

(1) Press the START/STOP button in the upper part of the commander.

(2) The numerals indicated on the LCD of the commander will go out for a few seconds and then will reappear.
* In this stage, if the commander's LCD display remains out and cannot be restored, there is an abnormality somewhere in the circuitry. Do not proceed to adjustment without correcting the abnormality.

4-2-3. Writing in Initial Data (IF Board)

① Turn on the camera, and start the CCB_SSC Control.

② Input "F03100" in the Command box, and press Enter key.

③ After confirming that Receive Data is <A> FA0001FF04, input "F03800" in the Command box, and press Enter key.

④ After confirming that Receive Data is <A> F80000F8, input "F03603AA0303" (SSC-CX34)/ "F03603AA0304" (SSC-CX34P) in the Command box, and press Enter key.

⑤ Initial data writing is over. If Receive Data is <A> F80000F8.

⑥ Turn off the camera, then power on again.

4-3. PRE ADJUSTMENT

4-3-1. Hall Adjustment

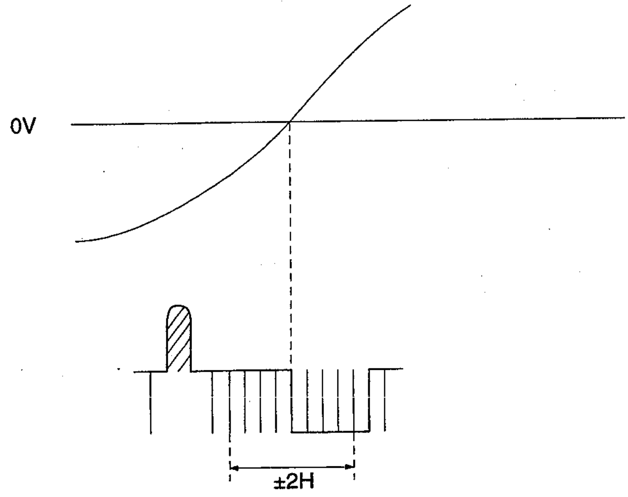
Subject	Not necessary
Measurement point	IC401-7pin on PS board
Equipment	Deigital voltmeter
Adjustment value	1.0 ± 0.05V at open iris 3.5 ± 0.05V at closed iris
Adjustment procedures	1. Turn on the camera, and start the CCB_SSC Control. 2. Click "Manual" in AE box. 3. Select "Auto Adjust" in "Option" menu bar, and clidk "Start". 4. Adjustment is over, when "complete" is displayed. 5. Close the Hall Adjust window. 6. Make sure that the adjusted values satisfy the specification by dragging the Iris slider to open position (left end), and to close position (right end) respectively.

4-3-2. Flange Back Adjustment

Subject	Flange back adjusting chart Adjust the angle of View so that the black-white edge of the chart crosses to center of monitor. (At 2m position from the lens Surface Illuminance: 300±50 lux)
Equipment	Monitor TV
Adjustment procedures	1. Drag the Iris slider to open position (left end). 2. Drag the Gain slider to minimum position (left end). 3. Move the cursor to the Command box, input "8612029600" (for power frequency 50Hz district) or "8612023200" (for power frequency 60Hz district), and press Enter key. 4. Drag the Zoom slider to the Tele end. 5. Click "Manual" in focus box, then click "Push" 6. Input "F03100 in Command box, and press Enter key. 7. After confirming that Recieve Data is <A> FA0001FF04, Input "F03400 in Command box, and press Enter key. 8. In about 30 seconds, if<A> F80000F8 is displayed in the Receive Data window, the adjustment is over. If not displayed, retry adjustmen from step 1. 9. Drag the Zoom slider to the Tele end, and adjust the focus with the Near/Far slider. 10. Moving slowly the Zoom slider toward wide, make sure that the focus has been adjusted properly.

4-3-3. V-Shifter Offset Reading

Subject	Not necessary
Measurement point	VIDEO OUT (CH-A), AC24V POWER terminal (CH-B)
Adjustment value	Phase difference: within ±2H
Adjustment procedures	1. With the LL/INT switch on rear panel at LL position, turn on the POWER switch. 2. Start the CCB_SSC Control, and click "Phase" in Option Control box. 3. Adjust with the V-Phase slider so that a phase difference between leading edge center of AC power waveform and trailing edge of camera V signal is within ±2H. 4. Input "F03100" in Command box, and press Enter key. 5. If Receive Data is <A> FA0001FF04, input "F03200" in Command box, and press Enter key. 6. Confirm that Receive Data is <A> F80000F8. 7. Input "86D1028000" in Command box, and press Enter Key. 8. Check to see if the Phase difference is within ±2H.



4-3-4. fsc Adjustment ① (SSC-CX34 only)

Subject	Free
Measurement point	PR Board TP202
Equipment	Frequency Counter
Adjustment point	PR Board CT201
Adjustment value	3.579545MHz ± 20Hz
Adjustment procedures	Operate an INT mode.

4-3-5. fsc Adjustment ②

Subject	Free
Measurement point	PR Board TP202
Equipment	Frequency Counter
Adjustment point	PR Board CT203
Adjustment value	3.579545MHz ± 20Hz (NTSC) 4.433619MHz ± 20Hz (PAL)
Adjustment procedures	Set the LL/INT switch on the rear panel to LL postion

4-3-6. VCO Adjustment

Subject	Unnecessary
Measurement point	PR Board TP201
Equipment	Oscilloscope (DC 500mV, 0.2 µS)
Adjustment point	PR Board CT202
Adjustment value	1.9 ± 0.1 V
Adjustment procedures	Set the LL/INT switch on the rearpanel to LL position. (60Hz (NTSC)/50Hz (PAL) power is required.)

4-4. CAMERA ADJUSTMENT

4-4-1. Setting up the Prepare for Adjustment Mode

① Press the MODE DISPLAY CHANGE button on the commander to display Mode "5F". Subsequently, press the CHANGE DATA button to display Data "01".

② Press the MODE DISPLAY CHANGE button on the commander to display Mode "61". Subsequently, press the CHANGE DATA button to display Data "01".

Subject	Unnecessary
Measurement point	Nothing

4-4-2. VSUB and VPG Adjustment

VPG and VSUB Set Values

The set values inherent to the CCD camera element employed are required for this adjustment.

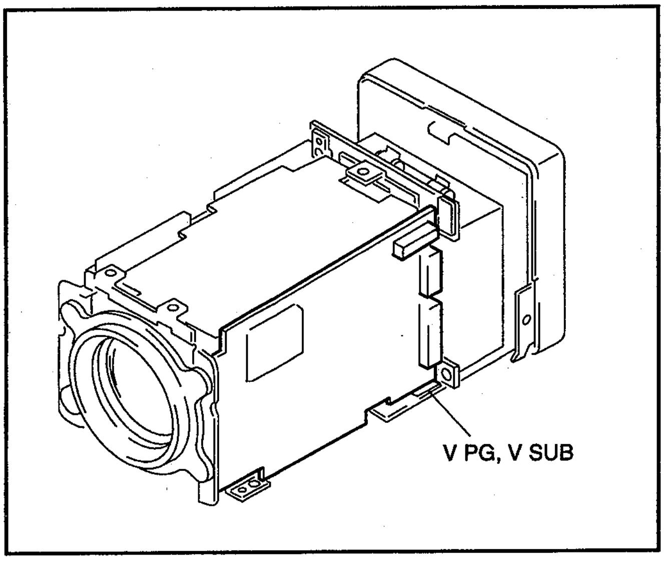
A set value is indicated as a two-digit code on the back of the CCD camera element.

The code has also been transcribed on the chassis.

If the CCD camera element has not been replaced, refer to the code transcribed on the chassis and carry out the adjustment.

If the CCD camera element has been replaced, do not fail to correct the code indicated on the chassis to the one indicated on the back of the new CCD camera element.

Code ··· indicated in two digits : ☐ ☐
↑ ↑
VPG code VSUB code



Adjusting the V SUB

① Press the STEP FORWARD button on the commander once. As a result, the displayed mode will change to "29".

② Press the CHANGE DATA button so that a determined voltage will fall within a range of standard values.

Subject	Free
Measurement point	Relay Jig TP3 (V-SUB)
Equipment	Digital voltmeter (DC Voltage)
Display Mode	29
Specification	(V SUB Set Value) ± 0.25 V

V SUB Set Value

CODE (second-digit)	V SUB (V)	CODE (second-digit)	V SUB (V)
A	7.0	N	13.0
B	7.5	P	13.5
C	8.0	Q	14.0
D	8.5	R	14.5
E	9.0	S	15.0
F	9.5	T	15.5
G	10.0	U	16.0
H	10.5	V	16.5
J	11.0	W	17.0
K	11.5	X	17.5
L	12.0	Y	18.0
M	12.5	Z	18.5

Adjusting the VPG

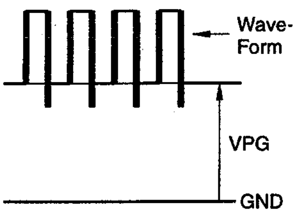
① Press the STEP FORWARD button on the commander once. As a result, the displayed mode will change over to "2A".

② Press the CHANGE DATA button so that the determined voltage will fall within the standard range.

Subject	Free
Measurement point	Relay Jig TP4 (V-PG)
Equipment	Oscilloscope (DC500 mV, 0.2 μs)
Display Mode	2A
Specification	(V PG Set Value) ± 0.25 V

V PG Set Value

CODE (second-digit)	V PG (V)
1	1.0
2	1.5
3	2.0
4	2.5
5	3.0
6	3.5
7	4.0



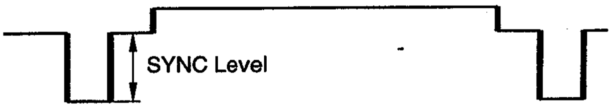
4-4-3. SYNC Level Adjustment

① Press the STEP FORWARD button on the commander once. As a result, the displayed mode will change to "2B".

② Press the LENS COSE button so that the lens iris is closed.

③ Press the CHANGE DATA button so that the determined voltage will fall within the standard range.

Subject	Free
Measurement point	SYNC level of VIDEO OUT
Equipment	Waveform Monitor
Display Mode	2B
Specification	40 ± 4 IRE (NTSC) 286 ±30 mV (PAL)
Lens opening	Close



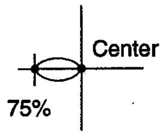
4-4-4. Burst Level Adjustment

① Press the STEP FORWARD button on the commander once. As a result, the displayed mode will change to "2C".

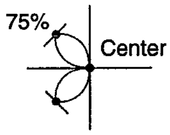
② Press the CHANGE DATA button so that the burst level will be 75%.

Subject	Free
Equipment	Vector scope
Display Mode	2C
Specification	Burst level is 75%

(NTSC)



(PAL)

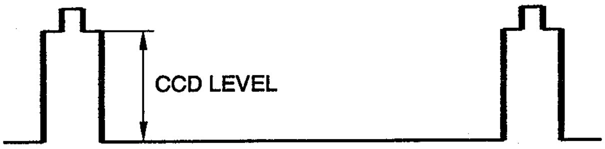


4-4-5. 0 dB Adjustment

① Press the STEP FORWARD button on the commander twice. As a result, the displayed mode will change to "5A".

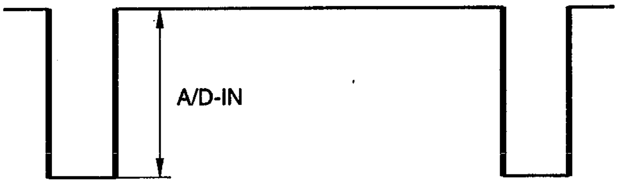
② Shoot the all-white pattern, and adjust the LENS OPEN/CLOSE button so that the CCD LEVEL (TP1) is 250 ± 20mVp-p.

Subject	All white pattern
Measurement point	Relay Jig TP1 (CCD LEVEL)
Equipment	Oscilloscope (AC 50 mV, 10 μs)
Display Mode	5A
Specification	250 ± 20 mV



③ Press the data change button to ensure the measured voltage is within the specified value range.

Subject	All white pattern
Measurement point	Relay Jig TP1 (CCD LEVEL)
Equipment	Oscilloscope (AC 200mV, 10 μs)
Display Mode	5A
Specification	800 ±40 mV



4-4-6. AGC MAX Adjustment

① Press the step forward button of the commander twice. The mode indicator will display "5C".

② Install the ND filter (6.25 %).
*Keep the lens iris at 4-4-6..

③ Press the data change button to ensure that the measured voltage is within the specified value range.

Subject	All white pattern
Measurement point	VIDEO OUT image level
Equipment	Waveform Monitor
Display Mode	5C
Specification	65 ± 3 IRE (NTSC) 455 ± 20 mV (PAL)

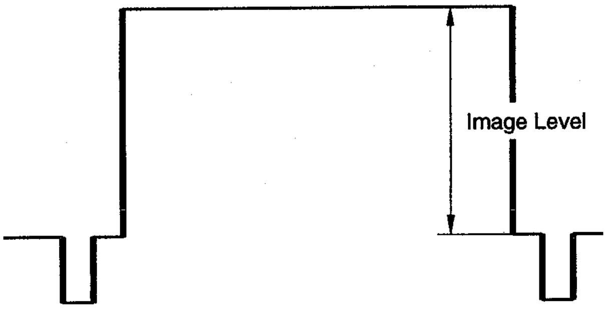


Image Level

4-4-7. WB (3200K preset) Adjustment

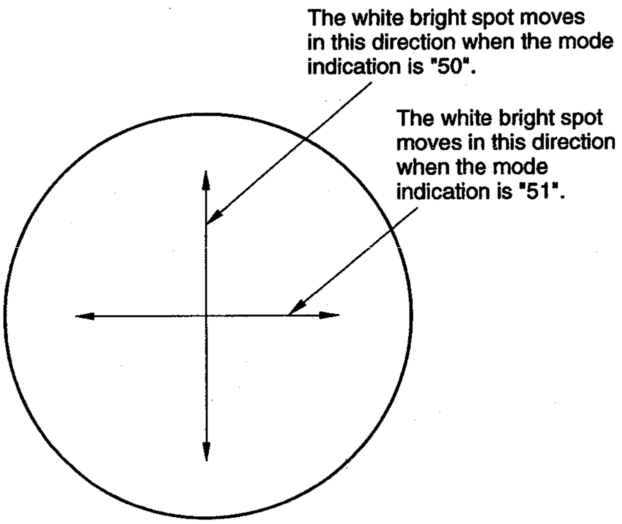
① Press the step forward button of the commander once. The mode indicator will display "50".

② Remove the ND filter. Adjust the LENS OPEN/CLOSE button so that the VIDEO-OUT image level is set at 65 ± 3 IRE (NTSC) or 455 ± 20mV (PAL).

Subject	All white pattern
Measurement point	Image level of VIDEO OUT
Equipment	Waveform Monitor
Display Mode	50
Specification	65 ± 3 IRE (NTSC) 455 ± 20 mV (PAL)

③ Alternately switch the mode between "50" and "51" by pressing the MODE DISPLAY CHANGE button, and while doing so, press the data change button so that the white bright spot is placed over the origin of the vector scope.

Subject	All white pattern
Measurement point	VIDEO OUT white bright spot
Equipment	Vectorscope
Display Mode	50,51
Specification	The white bright spot is placed over the origin of the vectorscope.


The white bright spot moves in this direction when the mode indication is "50".
The white bright spot moves in this direction when the mode indication is "51".

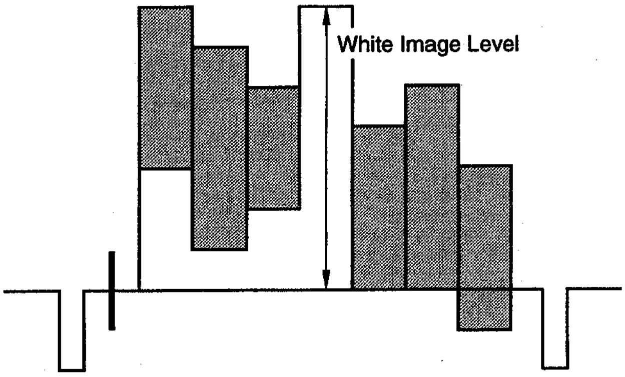
4-4-8. Color Reproduction

① Press the step forward button once. The mode indicator will display “03”.

② Shoot the color bar chart.

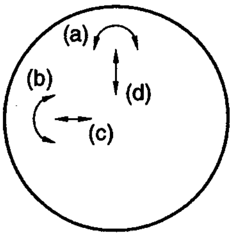
③ Adjust the LENS OPEN/CLOSE button so that the VIDEO-OUT white image level is set to 90 ± 2.5 IRE (NTSC) or 630 ± 15 mV (PAL).

Subject	Color Bar Chart
Measurement point	White image level of VIDEO OUT
Equipment	Waveform Monitor
Display Mode	03
Specification	90 ± 2.5 IRE (NTSC) 630 ± 15 mV (PAL)



④ Switching the mode between “03”, “04”, “05” and “06” by pressing the MODE DISPLAY CHANGE button and while doing so, press the data change button so that the center of the bright spot for each color is placed in it’s respective reproduction range.

Subject	Color Bar Chart
Measurement point	Respective color bright spot of VIDEO OUT
Equipment	Waveform Monitor
Display Mode	03, 04, 05, 06
Specification	The center of the bright spot for each color is in it’s respective reproduction range



(a) Moving direction of the bright spot when mode is “03”

(b) Moving direction of the bright spot when mode is “04”

(c) Moving direction of the bright spot when mode is “05”

(d) Moving direction of the bright spot when mode is “06”

4-4-9. WB Data Take-in

① Press the commander’s step forward button once. The mode indicator will display “63” and the data indicator will displays “02”.

② Shoot the all-white pattern.

③ Adjust the LENS OPEN/CLOSE button so that the image level of the VIDEO-OUT value is set to 65 ± 3 IRE (NTSC) or 455 ± 20 mV (PAL).

Subject	All white pattern
Measurement point	White image level of VIDEO OUT
Equipment	Waveform Monitor
Display Mode	63
Specification	65 ± 3 IRE (NTSC) 455 ± 20 mV (PAL)

④ Press the data up button of the commander so that the data indicator displays “03”.

⑤ Make sure that the data indicator of the commander automatically displays “FF”.

* If the data indicator does not display “FF”, there may be a defective part in the circuit. Repair it, then repeat these steps.

4-4-10. Data Write

① Press the step forward button of the commander once. The LCD indicator will turn off for a few seconds, then turn on. Make sure that the data indicator displays “00”. (The mode indicator should still display “63”.)

* If the LCD indicator turns off and does not turns on, or the data indicator does not display “00”, there may be a defective part in the circuit. Repair it, then repeat these steps.

Note: In this time, do not press the DATA write (PAUSE) button.

4-5. AFTER ADJUSTMENT CHECK

To check the values after adjustment, remove the commander and the commander junction fixture from the camera. Turn off the camera, then turn it on again before checking.
Adjust the lens iris by the Iris slider of the CCB_SSC Control.

4-5-1. Checking VSUB Voltage Adjustment

Check to see if the measured voltage is within the specified value range.

Subject	Free
Equipment	PR Board CN201 ③ pin (V-SUB)
Display Mode	Digital voltmeter (DC Voltage)
Specification	(V SUB Set Values) ± 0.25 V

4-5-2. Checking VPG Voltage Adjustment

Check to see if the measured voltage is within the specified value range.

Subject	Free
Equipment	PR Board CN201 ⑤ pin (V-PG)
Display Mode	Oscilloscope (DC 2 V, 0.2 μs)
Specification	(V PG Set Values) ± 0.25 V

4-5-3. Checking SYNC Level Adjustment

Check to see if the measured voltage is within the specified range.

Subject	Free
Measurement point	SYNC level of VIDEO OUT
Equipment	Waveform Monitor
Specification	40 ± 4 IRE (NTSC) 286 ±30 mV (PAL)
Lens iris	Close

4-5-4. Checking Burst Level Adjustment

Check to see if the measured voltage is within the specified range.

Subject	Free
Equipment	Vector scope
Specification	Burst level is 75%

4-5-5. Checking SET UP Adjustment

① Turn OFF the AGC switch on the rear panel of the camera.

② Check to see if the measured voltage is within the specified value range.

Subject	Free
Measurement point	SET UP level of VIDEO OUT
Equipment	Waveform Monitor
Specification	7.0 ± 2.0 IRE (NTSC) 20 ±15 mV (PAL)
Lens iris	Close

4-5-6. Checking 0 db Adjustment

① Turn OFF the AGC and CCD-IRIS switches on the rear panel of the camera.

② Shoot the all-white pattern and adjust the Iris slider of the CCB_SSC Control so that the CCD LEVEL is the specified value.

Subject	All white pattern
Measurement point	PR Board CN201 ① pin (CCD LEVEL)
Equipment	Oscilloscope (AC 50 m V, 10 μs)
Specification	250 ± 20 m V

③ Check to see if the AD/-IN value (CN201 ②pin) is within the specified value range.

Subject	All white pattern
Measurement point	PR Board CN201 ② pin (A/D-IN)
Equipment	Oscilloscope (AC 200 m V, 10 μs)
Specification	800 ±40 m V

* If there is a point where specified value for step ③ is satisfied while varying the iris within the specified value range for step ②, the adjustment is correct.

4-5-7. Checking AGC Adjustment

① Turn OFF the AGC and CCD-IRIS switches on the side panel of the camera.

② Shoot the all-white pattern and adjust the Iris slider of the CCB_SSC Control so that the VIDEO-OUT image level is the specified value.

Subject	All white pattern
Measurement point	Image level of VIDEO OUT
Equipment	Waveform Monitor
Specification	100 ± 2 IRE (NTSC) 700 ± 15 mV (PAL)

③ Set the ND filter (transmission factor: 6.25%).

④ Turn AGC the AGC/OFF switch on the rear panel of the camera, turn NORM the TURBO/NORM switch and turn BLC the OFF/BLC Switch.

⑤ Shoot the all-white pattern. Check to see if the VIDEO-OUT image level is within the specified value range.

Subject	All white pattern
Measurement point	Image level of VIDEO OUT
Equipment	Waveform Monitor
Specification	65 ± 5 IRE (NTSC) 455 ± 35 mV (PAL)

* If there is a point where the specified value for step ⑤ is satisfied while varying the Iris slider of the CCB_SSC Control within the specified value range for step ②, the adjustment is correct.

4-5-8. Checking WB adjustment (3200K preset and data take-in)

① Set the ATW/AWB switch on the camera rear panel to the ATW-PRO position, and turn OFF the AGC and FLC Switches.

② Set the C14 filter.

③ Shoot the all-white pattern. Adjust the Iris slider of the CCB_SSC Control so that the VIDEO-OUT image level is set within the specified value range.

Subject	All white pattern
Measurement point	Image level of VIDEO OUT
Equipment	Waveform Monitor
Specification	65 ± 3 IRE (NTSC) 455 ± 20 mV (PAL)

④ Check to see if the white bright spot on the vector scope converges to meet the specified value.

Subject		All white pattern
Measurement point		White bright spot of VIDEO OUT
Equipment		Vectorscope
Specification	Convergence time	Within 30 seconds
	Convergence spot	Within a radius of 10 % of the vector scope's diameter of the origin (Suppose the vectorscope's diameter is 100%.)

⑤ Remove the C14 filter and perform step 3 and step 4.

4-5-9. Checking Color Reproduction Adjustment

① Turn OFF the AGC and FLC switches on the side panel of the camera.

② Shoot the color bar chart.

③ Adjust the iris diaphragm so that the VIDEO-OUT white image level is set within the specified value range.

Subject	Color Bar Chart
Measurement point	White image level VIDEO OUT
Equipment	Waveform Monitor
Specification	90 ± 2.5 IRE (NTSC) 630 ± 15 mV (PAL)

④ Check to see if the center of the bright spot of each of the colors is within the color reproduction range.

Subject	Color Bar Chart
Measurement point	Respective color bright spot of VIDEO OUT
Equipment	Vector scope
Specification	The center of the bright spot for each color is in it's respective reproduction range.

* If there is a point where the specified value for step ④ is satisfied while varying the Iris slider within the specified value range for step ③, the adjustment is correct.

SECTION 5
REPAIR PARTS

5-1. NOTES ON SPARE PARTS

(1) Safety Related Components Warning
Components marked ! are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

(2) Standardization of Parts
Repair parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".
This manual's exploded views and electrical spare parts list are indicating the part numbers of "the standardized genuine parts at present".

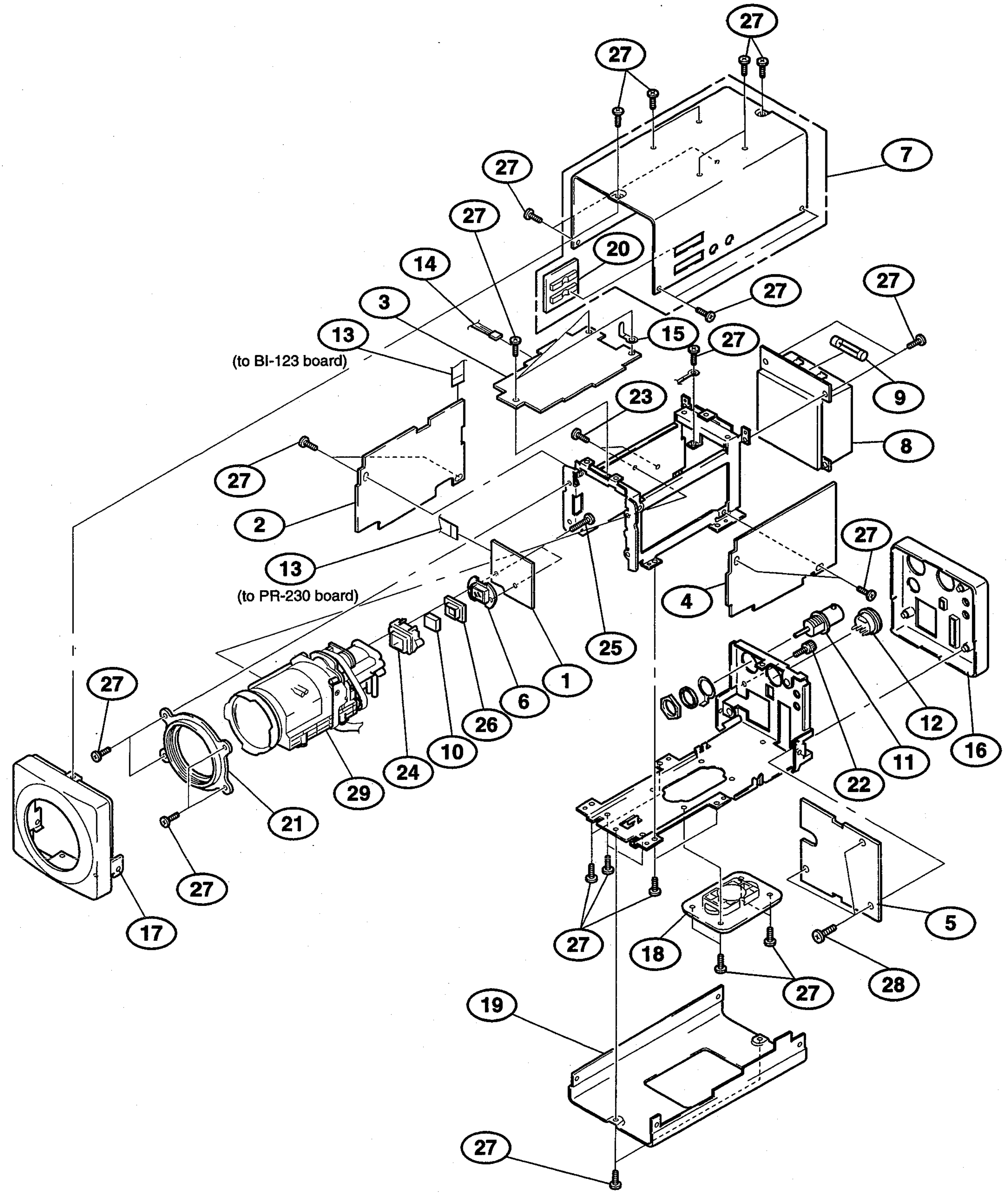
(3) Stock of Parts
Parts marked with "o" SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

(4) Units for Capacitors, Inductors and Resistors
The following units are assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors: mF
Inductors : µH
Resistors : Ω

5-2. EXPLODED VIEW AND PARTS LIST

No.	Part No.	SP	Description
1	A-8315-646-A	o	MOUNTED CIRCUIT BOARD, BI-123
2	A-8315-661-A	o	MOUNTED CIRCUIT BOARD, PR-230N(SSC-CX34)
	A-8315-674-A	o	MOUNTED CIRCUIT BOARD, PR-230P(SSC-CX34P)
3	A-8315-662-A	o	MOUNTED CIRCUIT BOARD, PS-482CXN(SSC-CX34)
	A-8315-675-A	o	MOUNTED CIRCUIT BOARD, PS-482CXP(SSC-CX34P)
4	A-8315-665-A	o	MOUNTED CIRCUIT BOARD, IF-669CXUC(SSC-CX34)
	A-8315-513-A	o	MOUNTED CIRCUIT BOARD, IF-669CXCE(SSC-CX34P)
5	A-8315-666-A	o	MOUNTED CIRCUIT BOARD, CT-196
6	A-8316-084-A	s	CCD ASSY(SSC-CX34)
	A-8316-085-A	s	CCD ASSY(SSC-CX34P)
7	X-3679-329-2	o	CASE ASSY,UPPER
8	1-475-321-11	s	CONVERTER UNIT, AC-DC
9	⚠1-532-740-11	s	FUSE, GLASS TUBE(SSC-CX34)
	⚠1-532-078-11	s	FUSE TIME-LAG(SSC-CX34P)
10	1-547-735-51	s	FILTER BLOCK, OPTICAL
11	1-580-724-11	s	CONNECTOR, BNC "VIDEO OUT"
12	1-774-806-11	s	CONNECTOR, ROUND TYPE (8PIN)"LENS CONTROL"
13	1-782-616-11	o	CABLE, FLEXIBLE FLAT (14 CORE)
14	1-957-899-11	o	HARNESS, SUB (CONNECTOR ASSY 3P)
15	2-277-426-01	o	CLAMP
16	3-608-860-01	s	PANEL,REAR
17	3-608-861-01	s	PANEL,FRONT
18	3-608-862-01	s	ADAPTOR,TRIPOD
19	3-608-865-01	o	CASE,LOWER
20	3-608-867-02	o	SHEET,SWITCH
21	3-608-876-01	o	ADAPTOR,FILTER
22	3-706-165-00	s	SCREW
23	3-719-601-11	s	SCREW (B2X5), TAPPING
24	3-946-856-01	s	ADAPTOR (H), CCD FITTING
25	3-947-268-01	s	TITE (2), +B TAPPING (P)
26	3-960-149-01	s	RUBBER (3), SEAL
27	7-621-772-10	s	SCREW +B 2X4
28	7-685-534-19	s	SCREW +BTP 2.6X8 TYPE2 N-S
29	8-848-704-01	s	DEVICE, LENS LSV-140A


(to BI-123 board)
(to PR-230 board)

5-3. ELECTRICAL PARTS LIST

AC-187 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-475-321-11	s	CONVERTER UNIT, AC-DC
F801 ⚠	1-532-740-11	s	FUSE, GLASS TUBE 1A 125V(SSC-CX34)
F801 ⚠	1-532-078-11	s	FUSE, TIME-LAG(SSC-CX34P)

BI-123 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8315-646-A	o	MOUNTED CIRCUIT BOARD, BI-123
C101	1-104-752-11	s	TANTALUM, CHIP 33uF 20% 6.3V
C102	1-135-091-00	s	TANTALUM, CHIP 1uF 20% 16V
C103	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C104	1-135-213-21	s	TANTALUM, CHIP 3.3uF 20% 25V
C105	1-107-686-11	s	TANTALUM, CHIP 4.7uF 20% 16V
CN101	1-573-923-21	s	CONNECTOR, FFC/FPC (ZIF) 14P
Q101	8-729-232-86	s	TRANSISTOR 2SK1875
Q102	8-729-230-60	s	TRANSISTOR 2SA1586-YG
R101	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W
R102	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R103	1-218-858-11	s	METAL, CHIP 3K 0.50% 1/16W
R104	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R105	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R106	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W

CT-196 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8315-666-A	o	MOUNTED CIRCUIT BOARD, CT-196
C901	1-165-379-11	s	CERAMIC, CHIP 0.0022uF 10% 500
C902	1-165-379-11	s	CERAMIC, CHIP 0.0022uF 10% 500
CN901	1-957-896-11	o	HARNESS, SUB (CONNECTOR ASSY 2P)
CN902	1-957-898-11	o	HARNESS, SUB (CONNECTOR ASSY 9P)
CN903	1-957-897-11	o	HARNESS, SUB (CONNECTOR ASSY 8P)
D901	8-719-980-40	s	DIODE SLR-34MG3F
D902	8-719-109-89	s	DIODE RD5.6ES-B2
D903	8-719-109-89	s	DIODE RD5.6ES-B2
D904	8-719-984-29	s	DIODE IMN11
D905	8-719-984-29	s	DIODE IMN11
D906	8-719-984-29	s	DIODE IMN11
L901	1-500-216-11	s	BEAD, FERRITE (CHIP)
L902	1-500-216-11	s	BEAD, FERRITE (CHIP)
L903	1-500-216-11	s	BEAD, FERRITE (CHIP)
L904	1-500-216-11	s	BEAD, FERRITE (CHIP)
L905	1-500-216-11	s	BEAD, FERRITE (CHIP)
L906	1-500-216-11	s	BEAD, FERRITE (CHIP)
L907	1-500-216-11	s	BEAD, FERRITE (CHIP)
PS901 ⚠	1-576-122-21	s	LINK, IC
R901	1-249-419-11	s	CARBON 1.5K 5% 1/4W
SW901	1-570-623-11	s	SWITCH, DIP 8-CKT
SW902	1-570-602-11	s	SWITCH, DIP 2-CKT
SW903	1-570-313-11	s	SWITCH, KEY BOARD
TB901	1-537-315-11	s	TERMINAL BOARD
W901	1-957-900-11	o	HARNESS, SUB (CONNECTOR ASSY 2P)

IF-669 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8315-513-A	o	MOUNTED CIRCUIT BOARD, IF-669CXCE (SSC-CX34P)
1pc	A-8315-665-A	o	MOUNTED CIRCUIT BOARD, IF-669CXUC (SSC-CX34)
C601	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C602	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C603	1-125-390-11	s	DOUBLE LAYERS 0.047F ARAD 5.5V
C604	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C605	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C606	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C607	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C608	1-135-091-00	s	TANTALUM, CHIP 1uF 20% 16V
C609	1-162-957-11	s	CERAMIC, CHIP 220PF 5% 50V
C610	1-162-923-11	s	CERAMIC, CHIP 47PF 5% 50V
C611	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C612	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C613	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C614	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C615	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C616	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C617	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C618	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C619	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C620	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C621	1-107-689-21	s	TANTALUM, CHIP 1uF 10% 35V
C622	1-107-689-21	s	TANTALUM, CHIP 1uF 0% 35V
C623	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C624	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C625	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C626	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C627	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C628	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C629	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C630	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C631	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C632	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C633	1-115-156-11	s	CERAMIC 1uF 10V
C634	1-115-156-11	s	CERAMIC 1uF 10V
C635	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C636	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C637	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C638	1-110-569-11	s	TANTALUM, CHIP 47uF 20% 6.3V
C639	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C640	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C641	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C642	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C643	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C644	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C645	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C646	1-107-686-11	s	TANTALUM, CHIP 4.7uF 20% 16V
C647	1-107-686-11	s	TANTALUM, CHIP 4.7uF 20% 16V
C648	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C649	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C650	1-113-991-11	s	TANTALUM 33uF 20% 16V
C651	1-113-991-11	s	TANTALUM 33uF 20% 16V
CN601	1-573-314-41	o	CONNECTOR, BOARD TO BOARD 28P
CN602	1-691-551-11	s	PIN, CONNECTOR 8P
CN603	1-691-551-11	s	PIN, CONNECTOR 8P

(IF-669 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
CN604	1-760-388-11	s	CONNECTOR, SMD 9P, MALE
D601	8-719-404-49	s	DIODE MA111
D602	8-719-059-52	s	DIODE MA3J14300LSO
D604	8-719-037-54	s	DIODE RD30SB-T1
D605	8-719-037-54	s	DIODE RD30SB-T1
D606	8-719-037-54	s	DIODE RD30SB-T1
D607	8-719-037-54	s	DIODE RD30SB-T1
D608	8-719-037-54	s	DIODE RD30SB-T1
D609	8-719-037-54	s	DIODE RD30SB-T1
D610	8-719-037-54	s	DIODE RD30SB-T1
D611	8-719-037-54	s	DIODE RD30SB-T1
D612	8-719-037-54	s	DIODE RD30SB-T1
D613	8-719-037-54	s	DIODE RD30SB-T1
D614	8-719-037-54	s	DIODE RD30SB-T1
D615	8-719-037-54	s	DIODE RD30SB-T1
D616	8-719-404-49	s	DIODE MA111
D617	8-719-404-49	s	DIODE MA111
D618	8-719-037-54	s	DIODE RD30SB-T1
D619	8-719-037-54	s	DIODE RD30SB-T1
D620	8-719-037-54	s	DIODE RD30SB-T1
D621	8-719-037-54	s	DIODE RD30SB-T1
D625	8-719-158-57	s	DIODE RD15SB2
D626	8-719-158-57	s	DIODE RD15SB2
D627	8-719-158-57	s	DIODE RD15SB2
D628	8-719-158-57	s	DIODE RD15SB2
D629	8-719-158-57	s	DIODE RD15SB2
D630	8-719-158-57	s	DIODE RD15SB2
D634	8-719-984-29	s	DIODE IMN11
D635	8-719-404-49	s	DIODE MA111
IC601	8-752-886-95	s	IC CXP84632-008Q
IC602	8-759-922-48	s	IC S-8052ALY
IC603	8-759-031-84	s	IC SC7S04F
IC604	8-759-079-66	s	IC TC74VHC123AFS(EL)
IC605	8-759-268-32	s	IC SN74HC595ADB-E05
IC606	8-759-268-32	s	IC SN74HC595ADB-E05
IC607	8-759-268-32	s	IC SN74HC595ADB-E05
IC608	8-759-268-32	s	IC SN74HC595ADB-E05
IC609	8-759-469-25	s	IC AK6440AF-E2
IC610	8-759-472-94	s	IC MAX3241CAI-TE2
IC611	8-759-031-84	s	IC SC7S04F
IC612	8-759-031-84	s	IC SC7S04F
IC613	8-759-922-48	s	IC S-8052ALY
IC614	8-759-075-97	s	IC LM358PW
L601	1-412-030-11	s	INDUCTOR, CHIP 22uH
L602	1-412-030-11	s	INDUCTOR, CHIP 22uH
L603	1-412-030-11	s	INDUCTOR, CHIP 22uH
L605	1-412-030-11	s	INDUCTOR, CHIP 22uH
L606	1-412-030-11	s	INDUCTOR, CHIP 22uH
L607	1-412-027-11	s	INDUCTOR, CHIP 2.2uH
Q601	8-729-230-60	s	TRANSISTOR 2SA1586-YG
Q602	8-729-230-63	s	TRANSISTOR 2SC4116-YG
Q603	8-729-230-60	s	TRANSISTOR 2SA1586-YG
Q605	8-729-230-60	s	TRANSISTOR 2SA1586-YG
Q606	8-729-230-60	s	TRANSISTOR 2SA1586-YG
R601	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R602	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R603	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W

(IF-669 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R604	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R605	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R606	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R607	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R608	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R609	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R610	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R611	1-216-864-11	s	METAL, CHIP 0 5% 1/16W (SSC-CX34)
R611	NO MOUNT (SSC-CX34P)		
R612	NO MOUNT (SSC-CX34)		
R612	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W(SSC-CX34P)
R613	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R615	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R617	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R618	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R619	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R620	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R621	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R622	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R623	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R624	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R625	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R629	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R632	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R635	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R636	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R637	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R638	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R639	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R640	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R642	1-218-871-11	s	METAL, CHIP 10K 0.50% 1/16W
R643	1-218-871-11	s	METAL, CHIP 10K 0.50% 1/16W
R644	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R645	1-220-261-11	s	METAL, CHIP 470 5% 1/4W
R646	1-218-871-11	s	METAL, CHIP 10K 0.50% 1/16W
R647	1-218-871-11	s	METAL, CHIP 10K 0.50% 1/16W
R648	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R649	1-220-261-11	s	METAL, CHIP 470 5% 1/4W
R650	1-218-871-11	s	METAL, CHIP 10K 0.50% 1/16W
R651	1-218-871-11	s	METAL, CHIP 10K 0.50% 1/16W
R652	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R653	1-220-261-11	s	METAL, CHIP 470 5% 1/4W
R656	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R658	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R659	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R660	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R661	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R662	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R663	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R664	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R665	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R666	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R667	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R668	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R669	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R670	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R671	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R672	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R686	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W

(IF-669 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R687	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R690	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R691	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
RV601	1-237-038-11	s	RES, ADJ, METAL 50K
RV602	1-237-038-11	s	RES, ADJ, METAL 50K
SW604	1-572-473-11	s	SWITCH, PUSH
SW605	1-572-473-11	s	SWITCH, PUSH
SW606	1-572-473-11	s	SWITCH, PUSH
SW607	1-572-473-11	s	SWITCH, PUSH
SW608	1-692-066-11	s	SWITCH, ROTARY
X601	1-760-314-11	s	CRYSTAL 11-895104MHz

PR-230 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8315-661-A	o	MOUNTED CIRCUIT BOARD, PR-230N (SSC-CX34)
1pc	A-8315-674-A	o	MOUNTED CIRCUIT BOARD, PR-230P (SSC-CX34P)
C201	1-107-686-11	s	TANTALUM, CHIP 4.7uF 20% 16V
C202	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C203	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 20V
C204	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 20V
C205	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C206	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C207	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C209	1-162-915-11	s	CERAMIC, CHIP 10PF 0.5PF 50V
C210	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C211	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C212	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C213	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C214	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C215	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C216	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C217	1-162-925-11	s	CERAMIC, CHIP 68PF 5% 50V
C218	1-113-984-11	s	TANTAL, CHIP 1.5uF 20% 35V
C219	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C220	1-135-091-00	s	TANTALUM, CHIP 1uF 20% 16V
C221	1-164-346-11	s	CERAMIC, CHIP 1uF 16V
C222	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C223	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C224	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C225	1-162-912-11	s	CERAMIC, CHIP 7PF 0.5PF 50V
C226	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C227	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C228	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C229	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C230	1-113-987-11	s	TANTAL, CHIP 4.7uF 20% 25V
C231	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C232	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C233	1-115-467-11	s	CERAMIC, CHIP 0.22uF 10% 10V
C234	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C235	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C236	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C237	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C238	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C239	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C240	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C241	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C242	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C243	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C244	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C245	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C246	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C247	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C248	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C249	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C250	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C251	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C252	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C253	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C254	1-162-920-11	s	CERAMIC, CHIP 27PF 5% 50V
C255	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C256	1-162-917-11	s	CERAMIC, CHIP 15PF 5% 50V
C257	1-162-908-11	s	CERAMIC, CHIP 3PF 0.25PF 50V
C258	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C259	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C260	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C261	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C262	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C263	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C264	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C265	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C266	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C267	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C268	NO MOUNT (SSC-CX34)		
C268	1-162-912-11	s	CERAMIC, CHIP 7PF 0.5PF 50V (SSC-CX34P)
C269	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C270	1-110-569-11	s	TANTALUM, CHIP 47uF 20% 6.3V
C271	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C272	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C273	1-110-569-11	s	TANTALUM, CHIP 47uF 20% 6.3V
C274	1-110-569-11	s	TANTALUM, CHIP 47uF 20% 6.3V
C275	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C276	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C277	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C278	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C279	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C280	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C281	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C282	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C283	1-135-181-21	s	TANTALUM, CHIP 4.7uF 10% 6.3V
C284	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C285	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C286	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C287	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C288	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C289	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C290	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C291	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C292	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C293	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C294	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C295	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C296	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C297	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C298	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C300	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C302	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C303	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C304	1-162-922-11	s	CERAMIC, CHIP 39PF 5% 50V(SSC-CX34)
C304	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V(SSC-CX34P)
C305	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C306	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C307	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C308	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C309	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C310	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C311	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C312	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C313	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C314	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V

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Ref. No. or Q'ty	Part No.	SP	Description
C316	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C317	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C320	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C325	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C327	1-135-091-00	s	TANTALUM, CHIP 1uF 20% 16V
C328	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C329	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C330	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C333	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C335	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C340	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C341	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C343	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C344	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C346	1-135-091-00	s	TANTALUM, CHIP 1uF 20% 16V
C347	1-162-915-11	s	CERAMIC, CHIP 10PF 0.5PF 50V
C348	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C349	1-111-253-11	s	TANTALUM, CHIP 100uF 20% 6.3V
C350	1-135-181-21	s	TANTALUM, CHIP 4.7uF 10% 6.3V
C351	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C353	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C356	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C357	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C358	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C359	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C360	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C361	1-113-987-11	s	TANTAL, CHIP 4.7uF 20% 25V
C362	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C363	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C366	1-107-686-11	s	TANTALUM, CHIP 4.7uF 20% 16V
C369	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C371	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C372	1-113-682-11	s	TANTALUM, CHIP 33uF 20% 10V
C375	1-110-569-11	s	TANTALUM, CHIP 47uF 20% 6.3V
CN201	1-764-007-11	s	CONNECTOR, SMD 12P, MALE
CN202	1-573-923-21	s	CONNECTOR, FFC/FPC (ZIF) 14P
CN203	1-580-055-21	s	CONNECTOR 2P, MALE
CN204	1-573-314-41	o	CONNECTOR, BOARD TO BOARD 28P
CT201	1-141-373-11	s	CAP, CHIP TRIMMER
CT202	1-141-368-11	s	CAP, CHIP TRIMMER
CT203	1-141-369-22	s	CAP, CHIP TRIMMER
D201	8-719-404-49	s	DIODE MA111
D202	8-719-404-49	s	DIODE MA111
D203	8-719-059-51	s	DIODE MA3J142E0LSO
D204	8-719-404-49	s	DIODE MA111
D205	8-719-404-49	s	DIODE MA111(SSC-CX34)
D205	NO MOUNT (SSC-CX34P)		
D206	8-719-404-49	s	DIODE MA111
D207	8-719-031-68	s	DIODE HVU359TRF
D208	8-719-404-49	s	DIODE MA111
D209	8-719-422-16	s	DIODE MA8039-L-TX
FL201	1-233-668-21	s	FILTER, BANDPASS
FL202	1-239-352-11	s	FILTER, LOW-PASS
IC201	8-759-196-93	s	IC TC7SH00FU-TE85R
IC202	8-759-196-93	s	IC TC7SH00FU-TE85R
IC203	8-752-073-11	s	IC CXA2006Q-T4
IC204	8-759-271-88	s	IC TC7SHU04FU
IC205	8-759-196-93	s	IC TC7SH00FU-TE85R

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Ref. No. or Q'ty	Part No.	SP	Description
IC206	8-752-388-60	s	IC CXD2480R-T4
IC207	8-759-058-64	s	IC TC7S32FU(TE85R)
IC208	8-759-271-88	s	IC TC7SHU04FU
IC209	8-759-335-30	s	IC HD49315AFEB
IC210	8-759-064-36	s	IC MB88346BPFV
IC211	8-759-271-88	s	IC TC7SHU04FU
IC212	8-752-388-59	s	IC CXD2163R-T6
IC213	8-759-196-93	s	IC TC7SH00FU-TE85R(SSC-CX34)
IC213	NO MOUNT (SSC-CX34P)		
IC214	8-759-922-48	s	IC S-8052ALY
IC215	8-759-464-95	s	IC AK6420AF-E2
IC216	8-759-079-66	s	IC TC74VHC123AFS(EL)
IC217	8-752-889-93	s	IC CXP87132-075R
IC218	8-759-196-93	s	IC TC7SH00FU-TE85R
IC219	8-759-058-58	s	IC TC7S04FU(TE85R)
IC220	8-759-082-60	s	IC TC7S66FU
IC223	8-759-079-46	s	IC TC74VHC00FS(EL)
IC224	8-759-100-93	s	IC UPC393G2
IC226	8-759-262-03	s	IC MC14577CF
IC227	8-759-271-88	s	IC TC7SHU04FU
IC230	8-759-257-96	s	IC TC7S14FU(TE85R)
IC239	8-752-374-02	s	IC CXD2418R
L201	1-412-030-11	s	INDUCTOR, CHIP 22uH
L202	1-412-030-11	s	INDUCTOR, CHIP 22uH
L206	1-412-030-11	s	INDUCTOR, CHIP 22uH
L207	1-412-030-11	s	INDUCTOR, CHIP 22uH
L208	1-412-030-11	s	INDUCTOR, CHIP 22uH
L209	1-410-374-11	s	INDUCTOR, CHIP 2.7uH
L210	1-412-030-11	s	INDUCTOR, CHIP 22uH
L211	1-412-030-11	s	INDUCTOR, CHIP 22uH
L212	1-412-030-11	s	INDUCTOR, CHIP 22uH
L213	1-412-030-11	s	INDUCTOR, CHIP 22uH
L216	1-412-030-11	s	INDUCTOR, CHIP 22uH
L217	1-412-032-11	s	INDUCTOR, CHIP 100uH
L219	1-412-030-11	s	INDUCTOR, CHIP 22uH
L220	1-412-030-11	s	INDUCTOR, CHIP 22uH
L221	1-412-030-11	s	INDUCTOR, CHIP 22uH
L223	1-412-030-11	s	INDUCTOR, CHIP 22uH
L224	1-412-030-11	s	INDUCTOR, CHIP 22uH
L225	1-412-030-11	s	INDUCTOR, CHIP 22uH
L227	1-412-030-11	s	INDUCTOR, CHIP 22uH
L228	1-412-030-11	s	INDUCTOR, CHIP 22uH
L229	1-412-027-11	s	INDUCTOR, CHIP 2.2uH
L230	1-412-027-11	s	INDUCTOR, CHIP 2.2uH
L231	1-412-030-11	s	INDUCTOR, CHIP 22uH
Q202	8-729-907-00	s	TRANSISTOR DTC114EU
Q203	8-729-427-70	s	TRANSISTOR XP4401
Q204	8-729-230-60	s	TRANSISTOR 2SA1586-YG
Q205	8-729-230-60	s	TRANSISTOR 2SA1586-YG
Q206	8-729-230-60	s	TRANSISTOR 2SA1586-YG
Q207	8-729-230-60	s	TRANSISTOR 2SA1586-YG
Q208	8-729-230-63	s	TRANSISTOR 2SC4116-YG
Q210	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q212	8-729-230-63	s	TRANSISTOR 2SC4116-YG
Q214	8-729-230-60	s	TRANSISTOR 2SA1586-YG
Q218	8-729-230-63	s	TRANSISTOR 2SC4116-YG
Q219	8-729-427-74	s	TRANSISTOR XP4601
Q223	8-729-230-63	s	TRANSISTOR 2SC4116-YG

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Ref. No. or Q'ty	Part No.	SP	Description
Q300	8-729-230-60	s	TRANSISTOR 2SA1586-YG
Q301	8-729-429-44	s	TRANSISTOR XP1501
Q303	8-729-230-63	s	TRANSISTOR 2SC4116-YG
R201	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R202	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R203	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R204	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R205	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R206	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R207	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R208	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R209	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R210	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R211	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R212	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R213	1-218-876-11	s	METAL, CHIP 16K 0.50% 1/16W
R214	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R215	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R216	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R217	1-216-807-11	s	METAL, CHIP 68 5% 1/16W
R218	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R219	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R220	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R221	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R222	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R223	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R224	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R225	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R227	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R228	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R229	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R230	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R231	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R232	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R233	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R234	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R235	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R236	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R237	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R238	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R240	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R241	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R242	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R243	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R244	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R245	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R246	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R247	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R248	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R249	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R250	NO MOUNT (SSC-CX34)		
R250	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W(SSC-CX34P)
R251	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R252	NO MOUNT (SSC-CX34)		
R252	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W(SSC-CX34P)
R253	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R254	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R255	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W

(PR-230 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R256	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R257	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R257	NO MOUNT (SSC-CX34P)		
R258	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R259	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R260	NO MOUNT (SSC-CX34)		
R260	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W(SSC-CX34P)
R261	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R262	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R263	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R264	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R265	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R266	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R267	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R268	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R269	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R270	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R271	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R275	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R277	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R278	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R280	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R281	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R282	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R283	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R284	1-218-840-11	s	METAL, CHIP 510 0.50% 1/16W
R287	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R288	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R295	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R296	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R303	1-218-878-11	s	METAL, CHIP 20K 0.50% 1/16W
R304	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R305	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R306	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R308	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R309	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R311	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R312	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R313	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R314	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R315	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R317	1-218-285-11	s	METAL, CHIP 75 5% 1/16W
R324	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R329	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R331	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R332	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R333	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R334	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R340	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R342	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R343	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R344	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R354	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R377	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R380	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
X201	1-579-619-23	s	CRYSTAL 28.636363MHz
X202	1-760-314-11	s	CRYSTAL 11-895104MHz
X203	1-579-994-12	s	RESONATOR, CERAMIC 14.31818MHz

PS-482 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8315-662-A	o	MOUNTED CIRCUIT BOARD, PS-482CXN (SSC-CX34)
1pc	A-8315-675-A	o	MOUNTED CIRCUIT BOARD, PS-482CXP (SSC-CX34P)
C401	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C402	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C403	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C404	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C405	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C406	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C407	1-164-156-11	s	CERAMIC, CHIP 0.1uF 25V
C408	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C409	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C410	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C411	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C412	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C413	1-113-682-11	s	TANTALUM, CHIP 33uF 20% 10V
C414	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C415	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C416	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C417	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C418	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C419	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C501	1-164-227-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C502	1-162-957-11	s	CERAMIC, CHIP 220PF 5% 50V
C503	1-164-227-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C504	1-135-181-21	s	TANTALUM, CHIP 4.7uF 10% 6.3V
C505	1-104-912-11	s	TANTALUM, CHIP 3.3uF 20% 16V
C506	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C507	1-104-847-11	s	TANTALUM, CHIP 22uF 20% 4V
C508	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C509	1-104-912-11	s	TANTALUM, CHIP 3.3uF 20% 16V
C510	1-135-181-21	s	TANTALUM, CHIP 4.7uF 10% 6.3V
C511	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C512	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C513	1-135-212-21	s	TANTALUM, CHIP 2.2uF 20% 35V
C514	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C516	1-164-392-11	s	CERAMIC, CHIP 390PF 5% 50V
C517	1-164-392-11	s	CERAMIC, CHIP 390PF 5% 50V
C518	1-135-212-21	s	TANTALUM, CHIP 2.2uF 20% 35V
C519	1-164-392-11	s	CERAMIC, CHIP 390PF 5% 50V
C520	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C521	1-135-212-21	s	TANTALUM, CHIP 2.2uF 20% 35V
C522	1-135-212-21	s	TANTALUM, CHIP 2.2uF 20% 35V
C523	1-135-212-21	s	TANTALUM, CHIP 2.2uF 20% 35V
C524	1-162-928-11	s	CERAMIC, CHIP 120PF 5% 50V
C526	1-107-834-11	s	ELECT, CHIP 8.2uF 20% 8V
C527	1-115-169-11	s	TANTALUM (SMD) 10uF 20% 6.3V
C528	1-164-506-11	s	CERAMIC, CHIP 4.7uF 16V
C529	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C530	1-164-346-11	s	CERAMIC, CHIP 1uF 16V
C531	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C532	1-164-505-11	s	CERAMIC, CHIP 2.2uF 16V
C533	1-135-259-11	s	TANTALUM, CHIP 10uF 20% 6.3V
C534	1-113-986-11	s	TANTALUM, CHIP 2.2uF 20% 25V
C535	1-104-920-11	s	TANTAL, CHIP 4.7uF 20% 35V
CN401	1-573-930-11	s	CONNECTOR, FFC/FPC (ZIF) 21P
CN402	1-573-342-81	o	CONNECTOR, BOARD TO BOARD 28P

(PS-482 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
CN403	1-573-342-81	o	CONNECTOR, BOARD TO BOARD 28P
CN501	1-580-056-21	o	CONNECTOR 3P, MALE
D501	8-719-975-40	s	DIODE RB411D
D502	8-719-975-40	s	DIODE RB411D
D503	8-719-027-77	s	DIODE MA796
IC401	8-759-349-19	s	IC NJM3414AM-TE2
IC402	8-759-100-95	s	IC UPC324G2
IC403	8-759-209-15	s	IC TC4SU69F
IC404	8-759-351-46	s	IC MPC17A34RVMEL
IC405	8-752-365-65	s	IC CXD2126N-T4
IC406	8-759-064-36	s	IC MB88346BPFV
IC501	8-759-261-48	s	IC TL1451ACPW-E20
IC502	8-759-261-48	s	IC TL1451ACPW-E20
L401	1-412-030-11	s	INDUCTOR, CHIP 22uH
L402	1-412-030-11	s	INDUCTOR, CHIP 22uH
L403	1-412-030-11	s	INDUCTOR, CHIP 22uH
L404	1-412-030-11	s	INDUCTOR, CHIP 22uH
L501	1-402-831-21	s	COIL, CHOKE 68uH
L502	1-406-580-11	s	COIL, CHOKE 100uH
L503	1-402-831-21	s	COIL, CHOKE 68uH
L504	1-414-265-21	s	INDUCTOR 4.7uH
L505	1-414-261-11	s	INDUCTOR 1uH
L506	1-414-261-11	s	INDUCTOR 1uH
L507	1-414-275-11	s	INDUCTOR 220uH
L508	1-414-275-11	s	INDUCTOR 220uH
Q401	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q402	8-729-230-63	s	TRANSISTOR 2SC4116-YG
Q501	8-729-216-22	s	TRANSISTOR 2SA1162
Q502	8-729-024-91	s	TRANSISTOR 2SC2712-GL-TE85L
Q503	8-729-216-22	s	TRANSISTOR 2SA1162
Q504	8-729-024-91	s	TRANSISTOR 2SC2712-GL-TE85L
Q505	8-729-216-22	s	TRANSISTOR 2SA1162
Q506	8-729-024-91	s	TRANSISTOR 2SC2712-GL-TE85L
Q507	8-729-823-82	s	TRANSISTOR FP101
Q508	8-729-823-82	s	TRANSISTOR FP101
Q509	8-729-823-82	s	TRANSISTOR FP101
Q510	8-729-024-91	s	TRANSISTOR 2SC2712-GL-TE85L
Q511	8-729-804-41	s	TRANSISTOR 2SB1122-S
R401	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R402	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R403	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R404	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R405	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R406	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R407	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R408	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R409	1-216-855-11	s	METAL, CHIP 680K 5% 1/16W
R410	1-216-848-11	s	METAL, CHIP 180K 5% 1/16W
R411	1-216-848-11	s	METAL, CHIP 180K 5% 1/16W
R412	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R413	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R414	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R415	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R416	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R417	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R418	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R419	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W

(PS-482 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R420	1-216-851-11	s	METAL, CHIP 330K 5% 1/16W
R421	1-218-853-11	s	METAL, CHIP 1.8K 0.50% 1/16W
R422	1-218-859-11	s	METAL, CHIP 3.3K 0.50% 1/16W
R423	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R423	NO MOUNT (SSC-CX34P)		
R424	NO MOUNT (SSC-CX34)		
R424	1-216-864-11	s	METAL, CHIP 0 5% 1/16W(SSC-CX34P)
R425	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R426	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R427	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R428	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R429	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R430	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R501	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R502	1-218-864-11	s	METAL, CHIP 5.1K 0.50% 1/16W
R503	1-218-871-11	s	METAL, CHIP 10K 0.50% 1/16W
R504	1-218-863-11	s	METAL, CHIP 4.7K 0.50% 1/16W
R505	1-218-863-11	s	METAL, CHIP 4.7K 0.50% 1/16W
R506	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R507	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R508	1-218-869-11	s	METAL, CHIP 8.2K 0.50% 1/16W
R509	1-218-863-11	s	METAL, CHIP 4.7K 0.50% 1/16W
R510	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R511	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R512	1-218-863-11	s	METAL, CHIP 4.7K 0.50% 1/16W
R513	1-218-867-11	s	METAL, CHIP 6.8K 0.50% 1/16W
R514	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R515	1-218-871-11	s	METAL, CHIP 10K 0.50% 1/16W
R516	1-218-854-11	s	METAL, CHIP 2K 0.50% 1/16W
R517	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R518	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R519	1-218-863-11	s	METAL, CHIP 4.7K 0.50% 1/16W
R520	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R521	1-218-863-11	s	METAL, CHIP 4.7K 0.50% 1/16W
R522	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R523	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R524	1-218-863-11	s	METAL, CHIP 4.7K 0.50% 1/16W
R525	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R526	1-218-863-11	s	METAL, CHIP 4.7K 0.50% 1/16W
R527	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R528	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R529	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R530	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R531	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R532	1-218-882-11	s	METAL, CHIP 30K 0.50% 1/16W
R533	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R534	1-218-878-11	s	METAL, CHIP 20K 0.50% 1/16W
R535	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R536	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R537	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R538	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R539	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R540	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R541	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R542	1-218-882-11	s	METAL, CHIP 30K 0.50% 1/16W
R543	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R544	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R545	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R546	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W

(PS-482 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R547	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R548	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R551	1-218-879-11	s	METAL, CHIP 22K 0.50% 1/16W
T501	1-450-976-11	s	TRANSFORMER, CONVERTER

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
CN904	1-580-724-11	s	CONNECTOR, BNC "VIDEO OUT"
CN905	1-774-806-11	s	CONNECTOR, ROUND TYPE 8P, FEMALE "LENS CONTROL"
HN1	1-782-616-11	o	CABLE, FLEXIBLE FLAT (14 CORE)
HN2	1-957-899-11	o	HARNESS, SUB (CONNECTOR ASSY 3P)

PACKING MATERIALS & SUPPLIED ACCESSORIES

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-782-615-11	s	CORD, CONNECTION
1pc	3-183-833-01	s	ADAPTOR
1pc	3-860-846-11	s	MANUAL, INSTRUCTION
1pc	3-860-846-21	s	MANUAL, INSTRUCTION (SSC-CX34P)

SECTION 6
SEMICONDUCTOR PIN ASSIGNMENTS

ここに記載されている半導体は，それぞれの機能を等価的に表したものです。　なお，互換性のない型名を併記していることがありますので，部品を交換するときは，Spare Partsの章を参照してください。
等価回路はＩＣメーカーのデータブックに従いました。

Semiconductors of which functions are equivalent are described here. For parts replacement, refer to the section of Spare Parts in this manual. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

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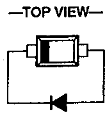
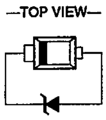
DIODE, TRANSISTOR

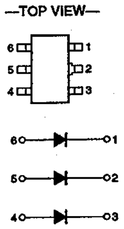
DIODE



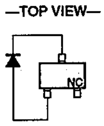
HVU359TRF



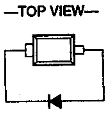
MA8039-L-TX
MA8056-L-TX


—TOP VIEW—
6
5
4
1
2
3
6
1
5
2
4
3

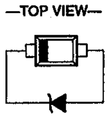
IMN11-T110



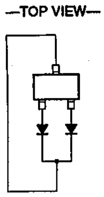
RB411D
RB411D-T146



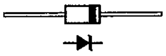
MA111
MA111-TX



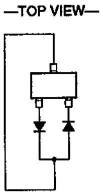
RD15SB2
RD15SB2-T1
RD30SB



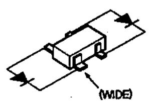
MA3J142E0LSO



RD5.6ES-B2
RD5.6ESB2

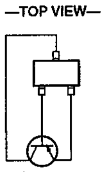


MA3J14300LSO

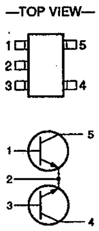


MA796
MA796-TX

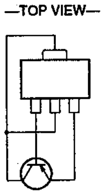
TRANSISTOR



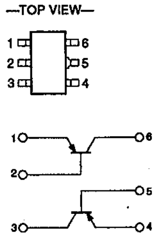
2SA1162-YG-TE85L
2SA1586-YG
2SA1586YG-TE85L


—TOP VIEW—
1
2
3
5
4
5
1
2
3
4

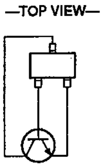
XP1501-TXE



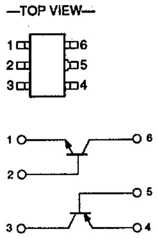
2SB1122
2SB1122-S-TD


—TOP VIEW—
1
2
3
6
5
4
1
6
2
5
3
4

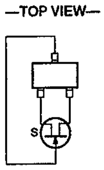
XP4401-TXE



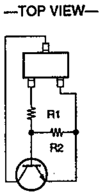
2SC2712
2SC2712-GL-TE85L
2SC4116-YG
2SC4116YG-TE85L
2SC4178-F14
2SC4178-T1F14


—TOP VIEW—
1
2
3
6
5
4
1
6
2
5
3
4

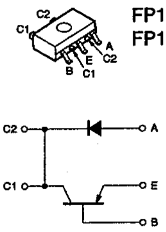
XP4601-TXE



2SK1875
2SK1875-(TE85L)

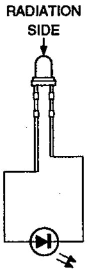

—TOP VIEW—
R1
R2

DTC114EUA-T106
(R1=10 K, R2=10 K)
DTC144EUA-T106
(R1=47 K, R2=47 K)

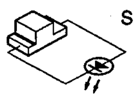

C2
C1
A
C2
B
E
C1
C2
A
C1
E
B

FP101
FP101-TL

LED


RADIATION SIDE

SLR-34MG3F ; GREEN

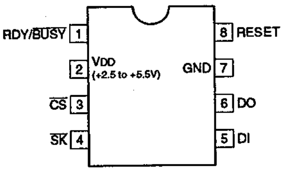


SML-210LT-T86

AK6420AF-E2 (ASAHI KASEI MICRO SYSTEM)

C-MOS 2048 (128 x 16)-BIT ELECTRICALLY ERASABLE PROM

—TOP VIEW—


RDY/BUSY 1
VDD (+2.5 to +5.5V) 2
CS 3
SK 4
8 RESET
GND 7
6 DO
5 DI

INPUT

CS ; CHIP SELECT

DI ; DATA INPUT

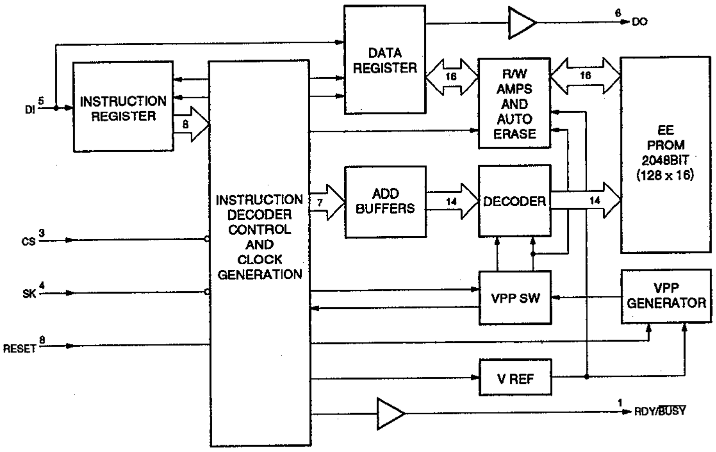
RESET ; RESET

SK ; SERIAL CLOCK

OUTPUT

DO ; DATA OUTPUT

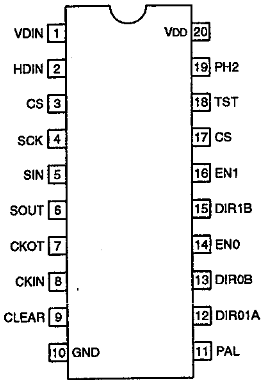
RDY/BUSY ; READY/BUSY

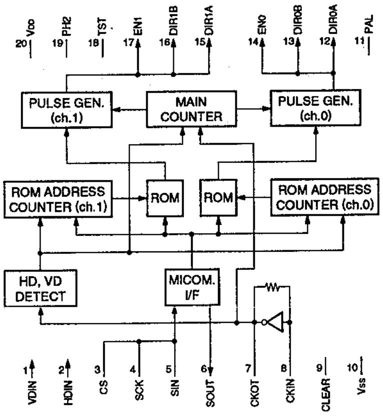

DATA REGISTER
R/W AMPS AND AUTO ERASE
EE PROM 2048BIT (128 x 16)
INSTRUCTION REGISTER
INSTRUCTION DECODER CONTROL AND CLOCK GENERATION
ADD BUFFERS
DECODER
VPP SW
VPP GENERATOR
V REF
16
16
8
7
14
14
DI 5
CS 3
SK 4
RESET 8
6 DO
1 RDY/BUSY

CXD2126N-T4 (SONY)

STEPPING MOTOR DRIVER

—TOP VIEW—


VDIN 1
HDIN 2
CS 3
SCK 4
SIN 5
SOUT 6
CKOT 7
CKIN 8
CLEAR 9
10 GND
VDD 20
19 PH2
18 TST
17 CS
16 EN1
15 DIR1B
14 EN0
13 DIR0B
12 DIR01A
11 PAL


Vcc 20
PH2 19
TST 18
EN1 17
DIR1B 16
DIR1A 15
EN0 14
DIR0B 13
DIR0A 12
PAL 11
PULSE GEN. (ch.1)
MAIN COUNTER
PULSE GEN. (ch.0)
ROM ADDRESS COUNTER (ch.1)
ROM
ROM
ROM ADDRESS COUNTER (ch.0)
HD, VD DETECT
MICOM. I/F
1 VDIN
2 HDIN
3 CS
4 SCK
5 SIN
6 SOUT
7 CKOT
8 CKIN
9 CLEAR
10 Vss

INPUT

CKIN ; CLOCK INPUT

CLEAR ; CLEAR

CS ; CHIP SELECT INPUT

HDIN ; HD SYNC INPUT

SCK ; CLOCK INPUT (MICOM DATA)

SIN ; MICOM DATA INPUT

PH2 ; MODE SELECT (H : TWO-POWER/L : ONE-POWER)

PAL ; MODE SELECT (H : PAL/L : NTSC)

TST ; TEST

VDIN ; VD SYNC INPUT

OUTPUT

CKOT ; CLOCK OUTPUT

DIR0A, DIR0B ; PWM OUTPUT (MOTOR DRIVER)

DIR1A, DIR1B ; PWM OUTPUT (MOTOR DRIVER)

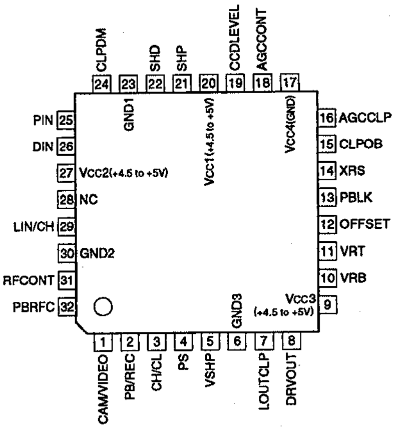
EN0, EN1 ; ENABLE OUTPUT (MOTOR DRIVER)

SOUT ; MICOM DATA OUTPUT

CXA2006Q-T4 (SONY)

DIGITAL CCD CAMERA HEAD AMPLIFIER

—TOP VIEW—


CLPDM 24
23
SHD 22
SHP 21
20
CCDLEVEL 19
AGCCONT 18
17
GND1
VCC1(+4.5 to +5V)
Vcc4(GND)
PIN 25
DIN 26
27 VCC2(+4.5 to +5V)
28 NC
LIN/CH 29
30 GND2
RFCONT 31
PBRFC 32
16 AGCCLP
15 CLPOB
14 XRS
13 PBLK
12 OFFSET
11 VRT
10 VRB
Vcc3 (+4.5 to +5V) 9
GND3
1 CAM/VIDEO
2 PB/REC
3 CH/CL
4 PS
5 VSHP
6
7 LOUTCLP
8 DRVOUT

INPUT

AGCCLP ; AGC CLAMP

AGCCONT ; AGC GAIN CONTROL

CAM/VIDEO ; CAMERA/VIDEO SELECT CONTROL

CH/CL ; CHROMA HIGH/LOW SELECT CONTROL

CLPDM ; DUMMY PIXEL CLAMP

CLPOB ; OPTICAL BLACK CLAMP

DIN ; CCD SIGNAL

LIN/CH ; COMPOSITE VIDEO (LIN)/HIGH CHROMA (CH)

LOUTCLP ; COMPOSITE VIDEO CLAMP

OFFSET ; OFFSET CONTROL

PB/REC ; CHROMA/COMPOSITE SELECT CONTROL

PBLK ; PRE-BLANKING PULSE

PBRFC ; LOW CHROMA (CL)

PIN ; CCD SIGNAL

PS ; POWER SAVE CONTROL

RFCONT ; LOW CHROMA GAIN CONTROL

SHD ; DATA LEVEL SAMPLE HOLD

SHP ; PRE-SET LEVEL SAMPLE HOLD

VSHP ; VIDEO SAMPLE HOLD PULSE

XRS ; CAMERA SAMPLE HOLD

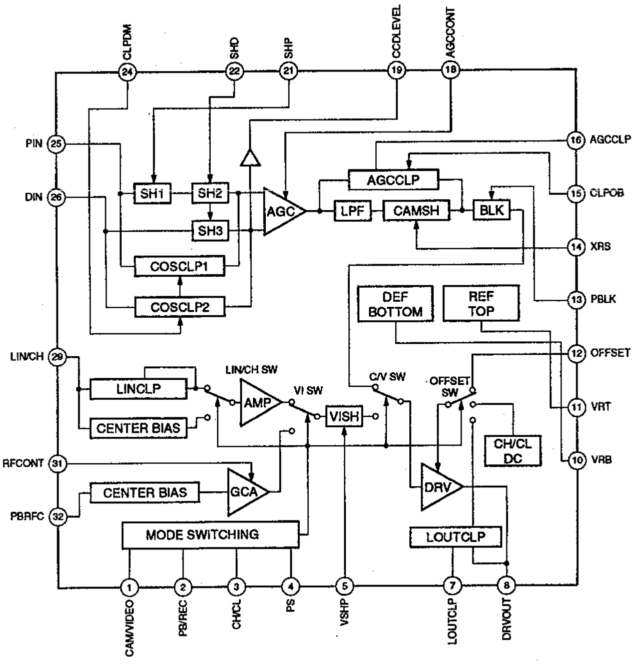
OUTPUT

CCDLEVEL ; SHD MONITOR

DRVOUT ; A/D CONVERTER DRIVE

VRB ; 2V REGULATOR

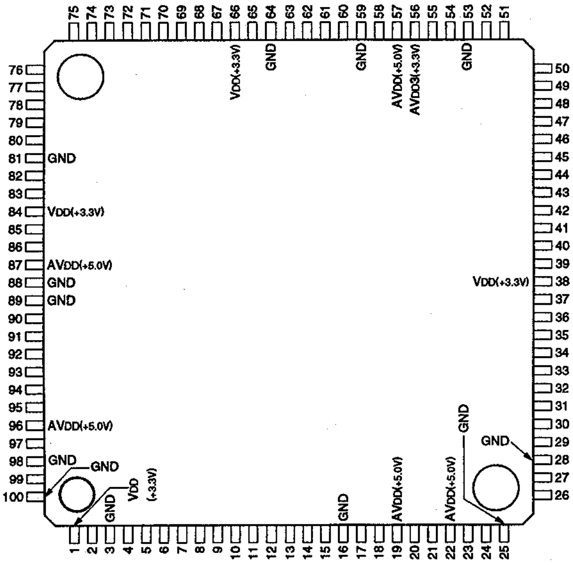
VRT ; 4V REGULATOR


CLPDM 24
SHD 22
SHP 21
CCDLEVEL 19
AGCCONT 18
PIN 25
DIN 26
SH1
SH2
SH3
AGC
AGCCLP
LPF
CAMSH
BLK
COSCLP1
COSCLP2
DEF BOTTOM
REF TOP
LIN/CH 29
LINCLP
CENTER BIAS
LIN/CH SW
AMP
VI SW
VISH
C/V SW
OFFSET SW
CH/CL DC
RFCONT 31
CENTER BIAS
GCA
DRV
PBRFC 32
MODE SWITCHING
LOUTCLP
16 AGCCLP
15 CLPOB
14 XRS
13 PBLK
12 OFFSET
11 VRT
10 VRB
1 CAM/VIDEO
2 PB/REC
3 CH/CL
4 PS
5 VSHP
7 LOUTCLP
8 DRVOUT

CXD2163R-T6 (SONY)

C-MOS SIGNAL PROCESSOR FOR SINGLE-PANEL CCD COLOR CAMERAS

—TOP VIEW—


75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51
VDD(+3.3V)
GND
GND
AVDD(+5.0V)
AVDD3(+3.3V)
GND
76 77 78 79 80
81 GND
82 83
84 VDD(+3.3V)
85 86
87 AVDD(+5.0V)
88 GND
89 GND
90 91 92 93 94 95
96 AVDD(+5.0V)
97
98 GND
GND
99 100
GND
VDD (+3.3V)
GND
AVDD(+5.0V)
AVDD(+5.0V)
GND
GND
50 49 48 47 46 45 44 43 42 41 40 39
VDD(+3.3V) 38
37 36 35 34 33 32 31 30 29 28 27 26
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	—	VDD	26	I	VREFC	51	O	FLD	76	O	CSTG
2	I	SIFSEL	27	I	VBC	52	O	SYNC	77	O	TGVD
3	—	GND	28	—	GND	53	—	GND	78	O	TGHD
4	I	AEME	29	I/O	DCK	54	O	OSCO	79	I	ID
5	I	FLON	30	O	YO7	55	I	OSCI	80	I	MCK
6	I	BLCOF	31	O	YO6	56	—	AVDD3	81	—	GND
7	I	MIRIS	32	O	YO5	57	—	AVDD	82	I	AESHUT
8	I	AEREF	33	O	YO4	58	I	ISET	83	O	CLP1
9	I	AGCMAX	34	O	YO3	59	—	GND	84	—	VDD
10	I	GAMMA	35	O	YO2	60	I	HRI	85	I	AD9
11	I	AWB1	36	O	YO1	61	I	VRI	86	I	AD8
12	I	AWB2	37	O	YO0	62	I/O	LRI	87	I	AD7
13	I	AWB3	38	—	VDD	63	O	PCOMP	88	I	AD6
14	I	VBY	39	O	CO7	64	—	GND	89	I	AD5
15	I	VREFY	40	O	CO6	65	I	XCLP	90	I	AD4
16	—	GND	41	O	CO5	66	—	VDD	91	I	AD3
17	O	IREFY	42	O	CO4	67	I	SCK	92	I	AD2
18	I	VGY	43	O	CO3	68	I	SI	93	I	AD1
19	—	AVDD	44	O	CO2	69	O	SO	94	I	AD0
20	O	IOY	45	O	CO1	70	I	XCS	95	I	VRT
21	O	IOC	46	O	CO0	71	O	CASCK	96	—	AVDD
22	—	AVDD	47	O	NRB	72	I	CASI	97	I	SHIN
23	I	VGC	48	O	FSCO	73	O	CASO	98	—	GND
24	O	IREFC	49	O	HD	74	O	CSROM	99	I	VRB
25	—	GND	50	O	VD	75	O	CSEVR	100	—	GND

INPUT

AD9 - AD0 ; DIGITAL DATA FROM EXTERNAL A/D
AEME ; AE MODE SELECT
AEREF ; AE LEVEL SELECT (AUTO) /FIX GAIN SELECT (MANUAL)
AESHUT ; H=SHUTTER SPEED MANUAL AND AGC AUTO MODE
AGCMAX ; AGC MAX GAIN SELECT (AUTO)/FIX GAIN SELECT (MANUAL)
AWB1 ; AWB MODE SELECT (L = AUTO, H = MANUAL)
AWB2 ; ATW/PUSH-LOCK SELECT (AUTO) /FIX WB MODE SELECT (MANUAL)
AWB3 ; PUSH-LOCK SIGNAL (AUTO) /FIX WB MODE SELECT (MANUAL)
BLCOF ; BACKLIGHT CORRECTION OFF (AUTO) /SHUTTER SPEED CONTROL (MANUAL)
CASI ; SERIAL DATA FOR CAMERA'S PERIPHERAL IC (TO EEPROM)
FLON ; FLICKERLESS MODE (AUTO) /SHUTTER SPEED CONTROL (MANUAL)
GAMMA ; GAMMA CORRECTION (L = ON, H = OFF)
HRI ; EXTERNAL SYNC (COMPOSITE VIDEO/H RESET)
ID ; LINE IDENTIFICATION
ISET ; CURRENT SOURCE
MCK ; MASTER CLOCK
MIRIS ; IRIS MODE SELECT (AUTO) /SHUTTER SPEED CONTROL (MANUAL)
OSCI ; 4fsc OSCILLATOR
SCK ; SERIAL CLOCK
SHIN ; ANALOG SIGNAL FOR INTERNAL A/D CONVERTER
SI ; RS-232C SERIAL DATA
SIFSEL ; SERIAL INTERFACE MODE SELECT
VBC ; EXTERNAL CAPACITOR
VBY ; EXTERNAL CAPACITOR
VGC ; EXTERNAL CAPACITOR
VGY ; EXTERNAL CAPACITOR
VRB ; REFERENCE BOTTOM VOLTAGE FOR INTERNAL A/D CONVERTER
VREFC ; REFERENCE VOLTAGE SETTING
VREFY ; REFERENCE VOLTAGE SETTING
VRI ; EXTERNAL SYNC (EXTERNAL BURST/V RESET)
VRT ; REFERENCE TOP VOLTAGE FOR INTERNAL A/D CONVERTER
XCLR ; CLEAR
XCS ; CHIP SELECT

OUTPUT

CASCK ; SERIAL CLOCK FOR CAMERA'S PERIPHERAL IC (TO TG, EVR, EEPROM)
CASO ; SERIAL DATA FOR CAMERA'S PERIPHERAL IC (TO TG, EVR, EEPROM)
CLP1 ; CLAMP PULSE FOR ANALOG OPTICAL BLACK LEVEL
CO7 - CO0 ; CHROMA DIGITAL
CSEVR ; CHIP SELECT FOR CAMERA'S PERIPHERAL IC (TO EVR)
CSROM ; CHIP SELECT FOR CAMERA'S PERIPHERAL IC (TO EEPROM)
CSTG ; CHIP SELECT FOR CAMERA'S PERIPHERAL IC (TO TG)
FLD ; FIELD IDENTIFICATION
FSCO ; SUBCARRIER
HD ; HORIZONTAL SYNC
IOC ; CHROMA SIGNAL
IOY ; Y SIGNAL
IREFC ; REFERENCE CURRENT SETTING
IREFY ; REFERENCE CURRENT SETTING
NRB ; COLOR DISCRIMINATION SIGNAL
OSCO ; 4fsc OSCILLATOR
PCOMP ; HPLL/VPLL PHASE COMPARATOR OUTPUTS
SO ; RS-232C SERIAL DATA
SYNC ; COMPOSITE SYNC
TGHD ; HORIZONTAL SYNC FOR TG
TGVD ; VERTICAL SYNC FOR TG
VD ; VERTICAL SYNC
YO7 - YO0 ; Y DIGITAL

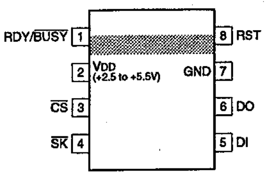
INPUT/OUTPUT

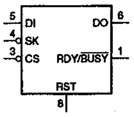
DCK ; DIGITAL OUTPUT YO/CO CLOCK
LRI ; EXTERNAL SYNC (LALT OUTPUT/LALT RESET INPUT/INTERNAL SC INPUT)

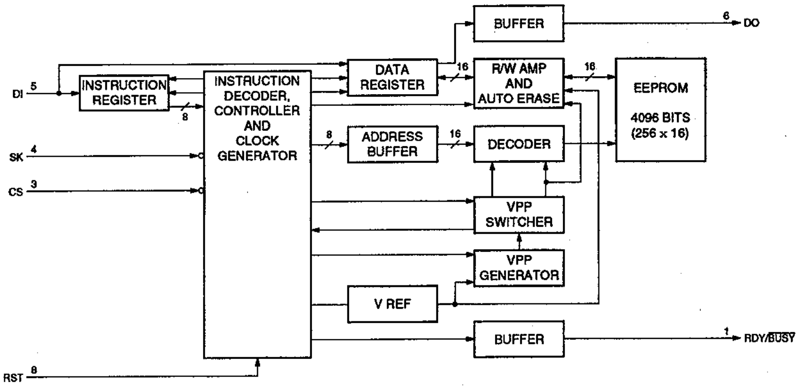
AK6440AF-E2 (ASAHI KASEI)

C-MOS 4K(256 x 16)-BIT SERIAL EEPROM

—TOP VIEW—


RDY/$\overline{\text{BUSY}}$ 1
2 VDD (+2.5 to +5.5V)
$\overline{\text{CS}}$ 3
$\overline{\text{SK}}$ 4
8 RST
GND 7
6 DO
5 DI


5 DI
4 SK
3 CS
DO 6
RDY/$\overline{\text{BUSY}}$ 1
RST
8

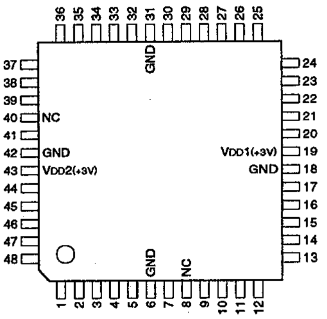

BUFFER
6 DO
DI 5
INSTRUCTION REGISTER
8
INSTRUCTION DECODER, CONTROLLER AND CLOCK GENERATOR
DATA REGISTER
16
R/W AMP AND AUTO ERASE
16
EEPROM
4096 BITS (256 x 16)
SK 4
8
ADDRESS BUFFER
16
DECODER
CS 3
VPP SWITCHER
VPP GENERATOR
V REF
BUFFER
1 RDY/$\overline{\text{BUSY}}$
RST 8

$\overline{\text{CS}}$; CHIP SELECT INPUT
DI ; SERIAL DATA INPUT
DO ; SERIAL DATA OUTPUT
RDY/$\overline{\text{BUSY}}$; READY/$\overline{\text{BUSY}}$ OUTPUT
RST ; RESET INPUT
$\overline{\text{SK}}$; SERIAL DATA CLOCK INPUT

CXD2418R (SONY)

C-MOS AUTO FOCUS SIGNAL DETECTOR

—TOP VIEW—


36
35
34
33
32
31
30
29
28
27
26
25
37
38
39
40
41
42
43
44
45
46
47
48
24
23
22
21
20
19
18
17
16
15
14
13
1
2
3
4
5
6
7
8
9
10
11
12
GND
NC
GND
VDD2(+3V)
VDD1(+3V)
GND
GND
NC

INPUT

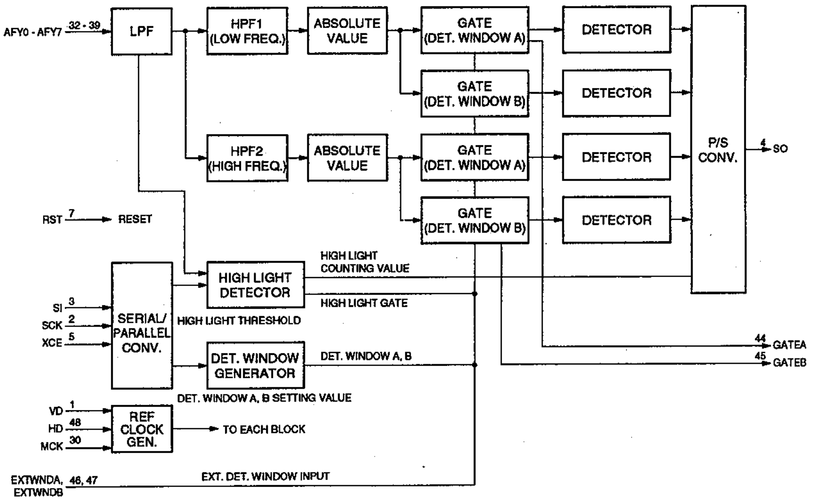
AFY0 - AFY7 ; AFY DATA
EXTWNDA, EXTWNDB ; EXTERNAL DETECTED WINDOW
HD ; HORIZONTAL SYNC
MCK ; MASTER CLOCK
RST ; RESET (H : NORMAL, L : POWER SAVE)
SCK ; SERIAL CLOCK
SI ; SERIAL DATA
TIN1 - TIN4 ; TEST
TMOD ; TEST
VD ; VERTICAL SYNC
XCE ; SERIAL STROBE

OUTPUT

GATEA, GATEB ; DETECTED WINDOW
SO ; SERIAL DATA
THCK ; TEST
THDL ; TEST
TO0 - TO11 ; TEST
TVDL ; TEST

(VDD = +3V)

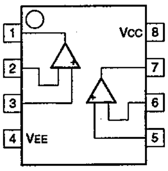
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I	VD	13	O	TO0	25	O	TO10	37	I	AFY5
2	I	SCK	14	O	TO1	26	O	TO11	38	I	AFY6
3	I	SI	15	O	TO2	27	O	TVDL	39	I	AFY7
4	O	SO	16	O	TO3	28	O	THDL	40	—	NC
5	I	XCE	17	O	TO4	29	O	THCK	41	I	TMOD
6	—	GND	18	—	GND	30	I	MCK	42	—	GND
7	O	RST	19	—	VDD	31	—	GND	43	—	VDD
8	—	NC	20	O	TO5	32	I	AFY0	44	O	GATEA
9	I	TIN1	21	O	TO6	33	I	AFY1	45	O	GATEB
10	I	TIN2	22	O	TO7	34	I	AFY2	46	I	EXTWNDA
11	I	TIN3	23	O	TO8	35	I	AFY3	47	I	EXTWNDB
12	I	TIN4	24	O	TO9	36	I	AFY4	48	I	HD


AFY0 - AFY7
32 - 39
LPF
HPF1 (LOW FREQ.)
ABSOLUTE VALUE
GATE (DET. WINDOW A)
DETECTOR
GATE (DET. WINDOW B)
DETECTOR
HPF2 (HIGH FREQ.)
ABSOLUTE VALUE
GATE (DET. WINDOW A)
DETECTOR
P/S CONV.
4
SO
GATE (DET. WINDOW B)
DETECTOR
RST
7
RESET
HIGH LIGHT COUNTING VALUE
HIGH LIGHT DETECTOR
HIGH LIGHT GATE
SI
3
SCK
2
XCE
5
SERIAL/ PARALLEL CONV.
HIGH LIGHT THRESHOLD
DET. WINDOW GENERATOR
DET. WINDOW A, B
44
GATEA
45
GATEB
DET. WINDOW A, B SETTING VALUE
VD
1
HD
48
MCK
30
REF CLOCK GEN.
TO EACH BLOCK
EXTWNDA, EXTWNDB
46, 47
EXT. DET. WINDOW INPUT

BA10358F-E2 (ROHM)FLAT PACKAGE
LM358PW (TI) FLAT PACKAGE
LM358PW-E05
NJM3414AM-TE2 (JRC)FLAT PACKAGE
UPC358G2-E2

DUAL OPERATIONAL AMPLIFIERS (SINGLE-SUPPLY TYPE)

—TOP VIEW—

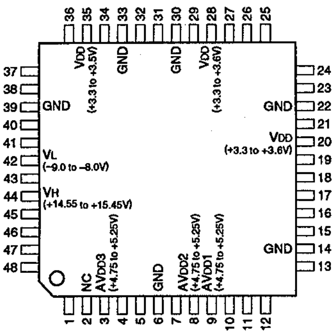

1
2
3
4
VEE
VCC
8
7
6
5

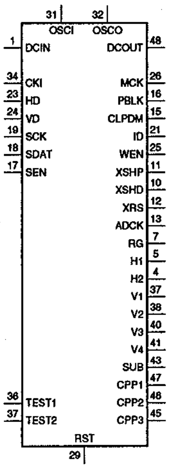
TYPE	VCC - VEE
828 TYPE	+5 to +36V
2244 TYPE	+2.5 to +36V
2904 TYPE	+3 to +24V
3404 TYPE	+4 to +32V
3414 TYPE	+3 to +10V
4572 TYPE	+4 to +14V
5216 TYPE	+4 to +32V
7022 TYPE	+3 to +16V
75W01 TYPE	+3 to +10V
33172 TYPE	+3 to +44V
OTHERS	+3 to +36V

CXD2480R-T4 SONY

C-MOS TIMING CONTROLLER WITH CCD DRIVERS

—TOP VIEW—


GND
VDD (+3.3 to +3.5V)
VDD (+3.3 to +3.6V)
VDD (+3.3 to +3.6V)
VL (-9.0 to -8.0V)
VH (+14.55 to +15.45V)
NC
AVDD3 (+4.75 to +5.25V)
AVDD2 (+4.75 to +5.25V)
AVDD1 (+4.75 to +5.25V)


31 OSCI
32 OSCO
1 DCIN
48 DCOUT
34 CKI
23 HD
24 VD
19 SCK
18 SDAT
17 SEN
26 MCK
16 PBLK
15 CLPDM
21 ID
25 WEN
11 XSHP
10 XSHD
12 XRS
13 ADCK
7 RG
5 H1
4 H2
37 V1
38 V2
40 V3
41 V4
43 SUB
47 CPP1
46 CPP2
45 CPP3
36 TEST1
27 TEST2
29 RST

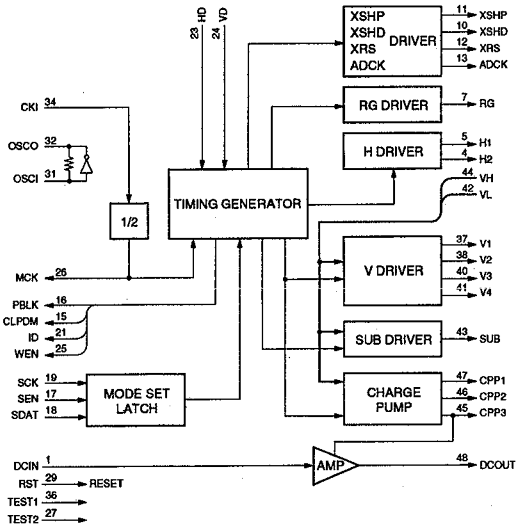
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I	DCIN	25	O	WEN
2	—	NC	26	O	MCK
3	—	AVDD3	27	I	TEST2
4	O	H2	28	—	VDD
5	O	H1	29	I	RST
6	—	GND	30	—	GND
7	O	RG	31	I	OSCI
8	—	AVCC2	32	O	OSCO
9	—	AVCC1	33	—	GND
10	O	XSHD	34	I	CKI
11	O	XSHP	35	—	VDD
12	O	XRS	36	I	TEST1
13	O	ADCK	37	O	V1
14	—	GND	38	O	V2
15	O	LLPDM	39	—	GND
16	O	PBLK	40	O	V3
17	I	SEN	41	O	V4
18	I	SDAT	42	—	VL
19	I	SCK	43	O	SUB
20	—	VDD	44	—	VH
21	O	ID	45	O	CPP3
22	—	GND	46	O	CPP2
23	I	HD	47	O	CPP1
24	I	VD	48	O	DCOUT

INPUT

CKI	; CLOCK
DCIN	; OPERATIONAL AMPLIFIER INPUT FOR GENERATING THE SUB CLAMP VOLTAGE
HD	; HORIZONTAL SYNC SIGNAL
OSCI	; OSCILLATOR
RST	; RESET
SCK	; SERIAL COMMUNICATION CLOCK
SDAT	; SERIAL COMMUNICATION DATA
SEN	; SERIAL COMMUNICATION STROBE
TEST1, TEST2	; TEST
VD	; VERTICAL SYNC SIGNAL

OUTPUT

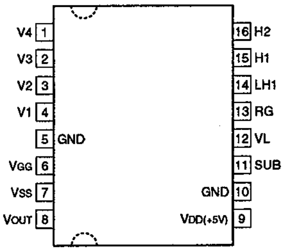
ADCK	; A/D CONVERTER CLOCK
CLPDM	; CLAMP PLUSE FOR CCD DUMMY SIGNAL
CPP1 - CPP3	; CHARGE PUMP CAPACITORS
DCOUT	; OPERATIONAL AMPLIFIER OUTPUT FOR GENERATING THE SUB CLAMP VOLTAGE
H1, H2	; CCD HORIZONTAL REGISTER DRIVE PULSES
ID	; LINE IDENTIFICATION SIGNAL
MCK	; MODULATION CLOCK (1/2 CKI)
OSCO	; OSCILLATOR
PBLK	; BLANKING CLEANING PULSE
RG	; CCD RESET GATE DRIVE PULSE
SUB	; CCD ELECTRON-CHARGE DRAIN PULSE
V1 - V4	; CCD VERTICAL REGISTER DRIVE PULSES
WEN	; WRITE ENABLE SIGNAL (ONLY IN LOW-SPEED SHUTTER OPERATION)
XRS	; A/D CONVERTER SAMPLE AND HOLD PULSE
XSHD	; SAMPLE AND HOLD PULSE FOR DATA
XSHP	; SAMPLE AND HOLD PULSE FOR PRECHARGING

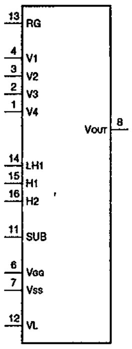

23 HD
24 VD
CKI 34
OSCO 32
OSCI 31
1/2
TIMING GENERATOR
MCK 26
PBLK 16
CLPDM 15
ID 21
WEN 25
SCK 19
SEN 17
SDAT 18
MODE SET LATCH
XSHP XSHD XRS ADCK DRIVER
11 XSHP
10 XSHD
12 XRS
13 ADCK
RG DRIVER
7 RG
H DRIVER
5 H1
4 H2
44 VH
42 VL
V DRIVER
37 V1
38 V2
40 V3
41 V4
SUB DRIVER
43 SUB
CHARGE PUMP
47 CPP1
46 CPP2
45 CPP3
DCIN 1
AMP
48 DCOUT
RST 29 RESET
TEST1 36
TEST2 27

ICX058CK-A (SONY)(NTSC, COLOR)
ICX059CK-A (SONY)(PAL, COLOR)

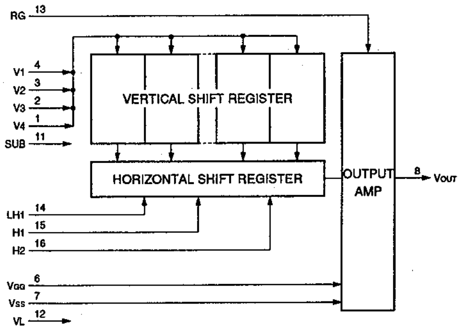
1/3-INCH CCD IMAGE BLOCK

—TOP VIEW—


V4 1
V3 2
V2 3
V1 4
5 GND
VGG 6
VSS 7
VOUT 8
16 H2
15 H1
14 LH1
13 RG
12 VL
11 SUB
GND 10
VDD(+5V) 9


13 RG
4 V1
3 V2
2 V3
1 V4
14 LH1
15 H1
16 H2
11 SUB
6 VGG
7 VSS
12 VL
VOUT 8

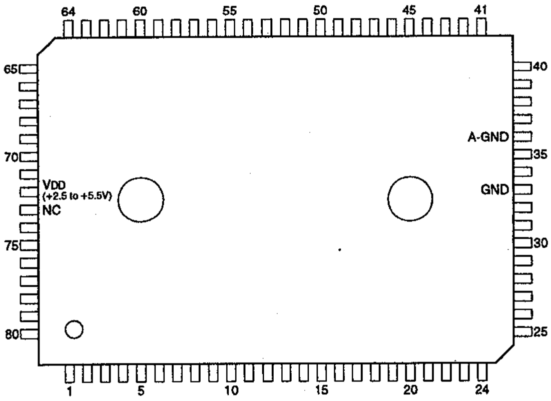
H1, H2	; HORIZONTAL REGISTER TRANSFER CLOCK
LH1	; HORIZONTAL REGISTER LAST STAGE TRANSFER CLOCK
RG	; RESET GATE CLOCK
SUB	; OVERFLOW DRAIN
VGG	; OUTPUT AMP GATE BIAS
VL	; PROTECTION TRANSISTOR BIAS
VSS	; OUTPUT AMP SOURCE
V1 - V4	; VERTICAL REGISTER TRANSFER CLOCK
VOUT	; SIGNAL OUTPUT


RG 13
V1 4
V2 3
V3 2
V4 1
SUB 11
VERTICAL SHIFT REGISTER
HORIZONTAL SHIFT REGISTER
OUTPUT AMP
8 VOUT
LH1 14
H1 15
H2 16
VGG 6
VSS 7
VL 12

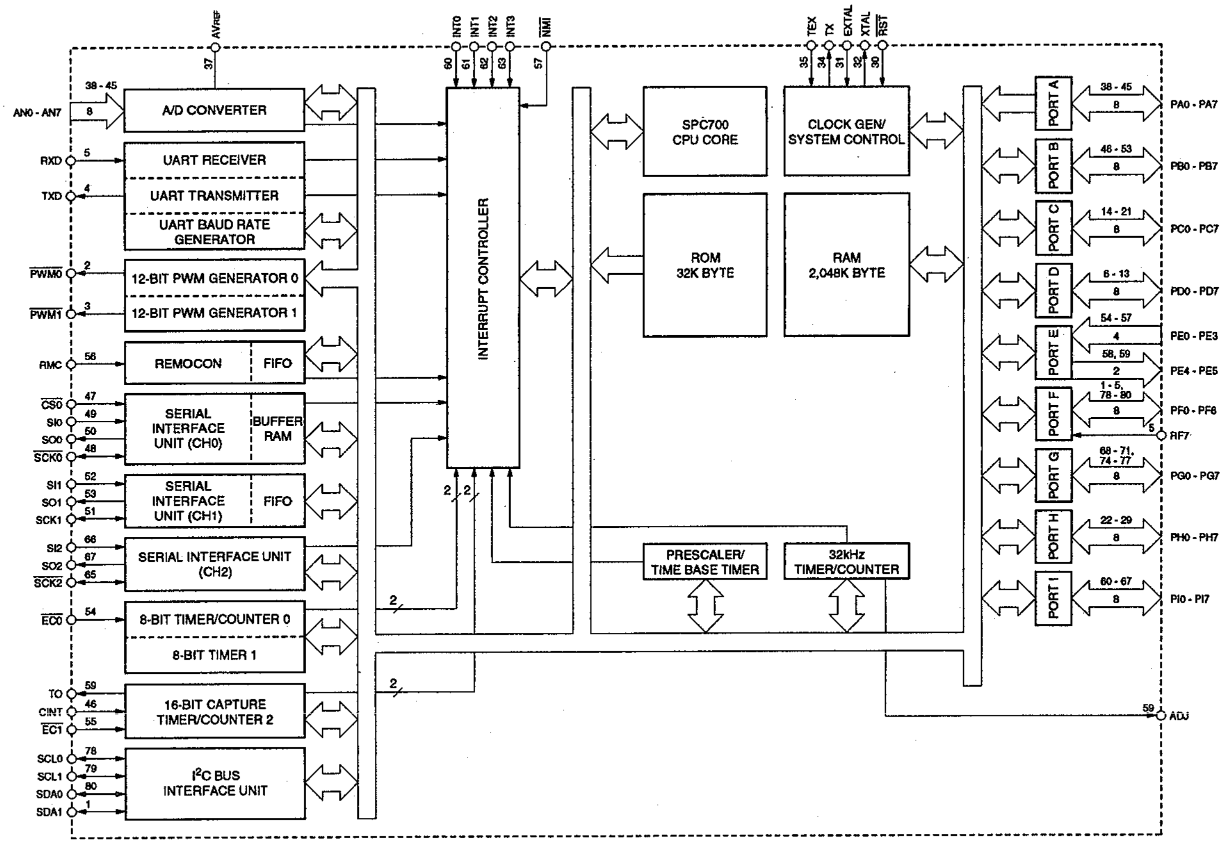
CXP84632-008Q (SONY)

C-MOS 8-BIT 1CHIP MICROCOMPUTER

—TOP VIEW—


64
60
55
50
45
41
65
70
75
80
40
35
30
25
1
5
10
15
20
24
VDD (+2.5 to +5.5V)
NC
A-GND
GND

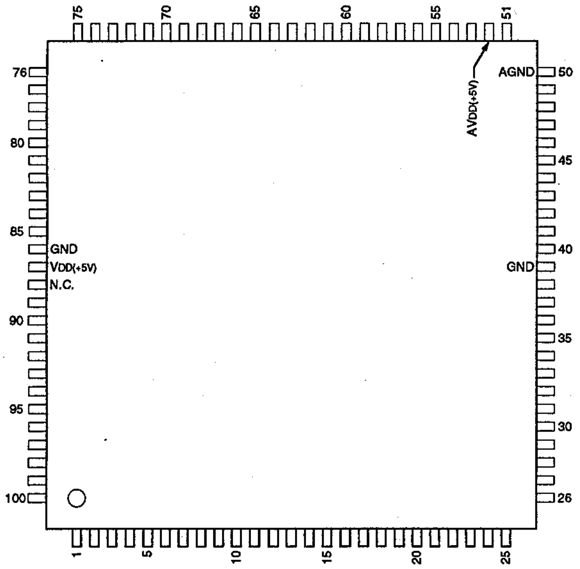
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I/O	PF3/SDA1	21	I/O	PC7	41	I/O	PA3/AN3	61	I/O	PI1/INT1
2	O	PF4/$\overline{\text{PWM0}}$	22	I/O	PH0	42	I/O	PA4/AN4	62	I/O	PI2/INT2
3	O	PF5/$\overline{\text{PWM1}}$	23	I/O	PH1	43	I/O	PA5/AN5	63	I/O	PI3/INT3
4	O	PF6/TXD	24	I/O	PH2	44	I/O	PA6/AN6	64	I/O	PI4/INT4
5	I	PF7/RXD	25	I/O	PH3	45	I/O	PA7/AN7	65	I/O	PI5/$\overline{\text{SCK2}}$
6	I/O	PD0	26	I/O	PH4	46	I/O	PB0/CINT	66	I/O	PI6/SI2
7	I/O	PD1	27	I/O	PH5	47	I/O	PB1/$\overline{\text{CS0}}$	67	I/O	PI7/SO2
8	I/O	PD2	28	I/O	PH6	48	I/O	PB2/$\overline{\text{SCK0}}$	68	I/O	PG0
9	I/O	PD3	29	I/O	PH7	49	I/O	PB3/SI0	69	I/O	PG1
10	I/O	PD4	30	I	$\overline{\text{RST}}$	50	I/O	PB4/SO0	70	I/O	PG2
11	I/O	PD5	31	I	EXTAL	51	I/O	PB5/$\overline{\text{SCK1}}$	71	I/O	PG3
12	I/O	PD6	32	O	XTAL	52	I/O	PB6/SI1	72	—	VDD
13	I/O	PD7	33	—	GND	53	I/O	PB7/SO1	73	—	NC
14	I/O	PC0	34	O	TX	54	I	PE0/$\overline{\text{EC0}}$	74	I/O	PG4
15	I/O	PC1	35	I	TEX	55	I	PE1/$\overline{\text{EC1}}$	75	I/O	PG5
16	I/O	PC2	36	—	A-GND	56	I	PE2/RMC	76	I/O	PG6
17	I/O	PC3	37	I	AVREF	57	I	PE3/$\overline{\text{NMI}}$	77	I/O	PG7
18	I/O	PC4	38	I/O	PA0/AN0	58	O	PE4	78	I/O	PF0/SCL0
19	I/O	PC5	39	I/O	PA1/AN1	59	O	PE5/TO/ADJ	79	I/O	PF1/SCL1
20	I/O	PC6	40	I/O	PA2/AN2	60	I/O	PI0/INT0	80	I/O	PF2/SDA0


AVREF
37
INT0
INT1
INT2
INT3
NMI
60
61
62
63
57
TEX
TX
EXTAL
XTAL
RST
35
34
31
32
30
AN0 - AN7
38 - 45
8
A/D CONVERTER
RXD
5
UART RECEIVER
TXD
4
UART TRANSMITTER
UART BAUD RATE GENERATOR
PWM0
2
12-BIT PWM GENERATOR 0
PWM1
3
12-BIT PWM GENERATOR 1
RMC
56
REMOCON
FIFO
CS0
47
SI0
49
SO0
50
SCK0
48
SERIAL INTERFACE UNIT (CH0)
BUFFER RAM
SI1
52
SO1
53
SCK1
51
SERIAL INTERFACE UNIT (CH1)
FIFO
SI2
66
SO2
67
SCK2
65
SERIAL INTERFACE UNIT (CH2)
EC0
54
8-BIT TIMER/COUNTER 0
8-BIT TIMER 1
TO
59
CINT
46
EC1
55
16-BIT CAPTURE TIMER/COUNTER 2
SCL0
78
SCL1
79
SDA0
80
SDA1
1
I²C BUS INTERFACE UNIT
INTERRUPT CONTROLLER
2
2
2
2
SPC700 CPU CORE
CLOCK GEN/ SYSTEM CONTROL
ROM 32K BYTE
RAM 2,048K BYTE
PRESCALER/ TIME BASE TIMER
32kHz TIMER/COUNTER
PORT A
38 - 45
8
PA0 - PA7
PORT B
46 - 53
8
PB0 - PB7
PORT C
14 - 21
8
PC0 - PC7
PORT D
6 - 13
8
PD0 - PD7
PORT E
54 - 57
4
PE0 - PE3
58, 59
2
PE4 - PE5
PORT F
1 - 5, 78 - 80
8
PF0 - PF6
5
PF7
PORT G
68 - 71, 74 - 77
8
PG0 - PG7
PORT H
22 - 29
8
PH0 - PH7
PORT I
60 - 67
8
PI0 - PI7
59
ADJ

CXP87132-075R (SONY)

C-MOS 8-BIT 1-CHIP MICROCOMPUTER

—TOP VIEW—



(VDD, AVDD = +5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	PB3/PPO011	26	I/O	PD2	51	—	AVREF	76	I/O	PE0/$\overline{\text{INT0}}$/XOUT
2	O	PB2/PPO010	27	I/O	PD1	52	—	AVDD	77	I/O	PI7/SI1
3	O	PB1/PPO009	28	I/O	PD0	53	I	PF3/AN7	78	I/O	PI6/SO1
4	O	PB0/PPO008	29	O	PH7	54	I	PF2/AN6	79	I/O	PI5/$\overline{\text{SCK1}}$
5	I/O	PC7/RTO7	30	O	PH6	55	I	PF1/AN5	80	I/O	PI4/$\overline{\text{INT1}}$
6	I/O	PC6/RTO6	31	O	PH5	56	I	PF0/AN4	81	I/O	PI3/TO
7	I/O	PC5/RTO5	32	O	PH4	57	I	AN3	82	I/O	PI2/$\overline{\text{PWM}}$
8	I/O	PC4/RTO4	33	O	PH3	58	I	AN2	83	I/O	PI1/PO
9	I/O	PC3/RTO3	34	O	PH2	59	I	AN1	84	I	PI0/PCK/OSCI
10	I/O	PC2/PPO018	35	O	PH1	60	I	AN0	85	I/O	PK0/OSCO
11	I/O	PC1/PPO017	36	O	PH0	61	I	PG7/EXI1/PMSK	86	—	GND
12	I/O	PC0/PPO016	37	I	MP	62	I	PG6/EXI0	87	—	VDD
13	I/O	PJ7	38	I/O	$\overline{\text{RST}}$	63	I	PG5/SYNC1	88	—	N.C.
14	I/O	PJ6	39	—	GND	64	I	PG4/SYNC0/PMI	89	O	PA7/PPO007/PPO107
15	I/O	PJ5	40	—	XTAL	65	I	PG3/$\overline{\text{PBCTL}}$	90	O	PA6/PPO006/PPO106
16	I/O	PJ4	41	I	EXTAL	66	I	PG2/DPG	91	O	PA5/PPO005/PPO105
17	I/O	PJ3	42	I	$\overline{\text{CS0}}$	67	I	PG1/DFG	92	O	PA4/PPO004/PPO104
18	I/O	PJ2	43	I	SI0	68	I	PG0/CFG	93	O	PA3/PPO003/PPO103
19	I/O	PJ1	44	O	SO0	69	O	PE7/DAB1	94	O	PA2/PPO002/PPO102
20	I/O	PJ0	45	I/O	$\overline{\text{SCK0}}$	70	O	PE6/DAB0	95	O	PA1/PPO001/PPO101
21	I/O	PD7	46	I/O	PF7/AN11	71	O	PE5/DAA1	96	O	PA0/PPO000/PPO100
22	I/O	PD6	47	I/O	PF6/AN10	72	O	PE4/DAA0	97	O	PB7/PPO015
23	I/O	PD5	48	I/O	PF5/AN9	73	O	PE3/PWM1	98	O	PB6/PPO014
24	I/O	PD4	49	I/O	PF4/AN8	74	O	PE2/PWM0	99	O	PB5/PPO013/PPO113
25	I/O	PD3	50	—	AGND	75	I	PE1/$\overline{\text{EC}}$/$\overline{\text{INT2}}$	100	O	PB4/PPO012/PPO112

INPUT

AN0 - AN11 ; A/D CONVERTER'S ANALOG INPUTS
CFG ; CAPSTAN FG INPUT
CS0 ; SERIAL INTERFACE CHANNEL 0 SELECT INPUT
DPG, DFG ; DRUM PG AND FG INPUTS
EC ; EVENT CONTROL INPUT FOR TIMER/COUNTER
EXI0, EXI1 ; FRC CAPTURE UNIT'S EXTERNAL INPUTS
EXTAL ; CRYSTAL CONNECTION OR EXTERNAL CLOCK INPUT FOR SYSTEM CLOCK GENERATOR
INT0 - INT2 ; INTERRUPT REQUEST INPUTS (FALLING EDGE ACTIVE)
MP ; MICROPROCESSOR MODE INPUT
OSCI ; CRYSTAL CONNECTION OF OSCILLATION CIRCUIT FOR PRESCALER
PBCTL ; PLAYBACK CTL PULSE INPUT
PCK ; PRESCALER'S EXTERNAL CLOCK INPUT
PE0, PE1 ; INPUTS OF PORT E (PE2 - PE7 ; OUTPUTS)
PF0 - PF3 ; INPUTS OF PORT F (PF4 - PF7 ; OUTPUTS)
PG0 - PG7 ; INPUTS OF PORT G
PI0 ; INPUT OF PORT I (PI1 - PI7 ; INPUTS/OUTPUTS)
PK0 ; INPUT OF PORT K
PMI ; INSTRUMENTATION PULSE INPUT OF PULSE MEASURE UNIT
PMSK ; INSTRUMENTATION ENABLE INPUT OF PULSE MEASURE UNIT
SI0, SI1 ; SERIAL DATA INPUTS (CHANNEL 0 AND CHANNEL 1)
SYNC0, SYNC1 ; COMPOSITE SYNC SIGNAL INPUTS

OUTPUT

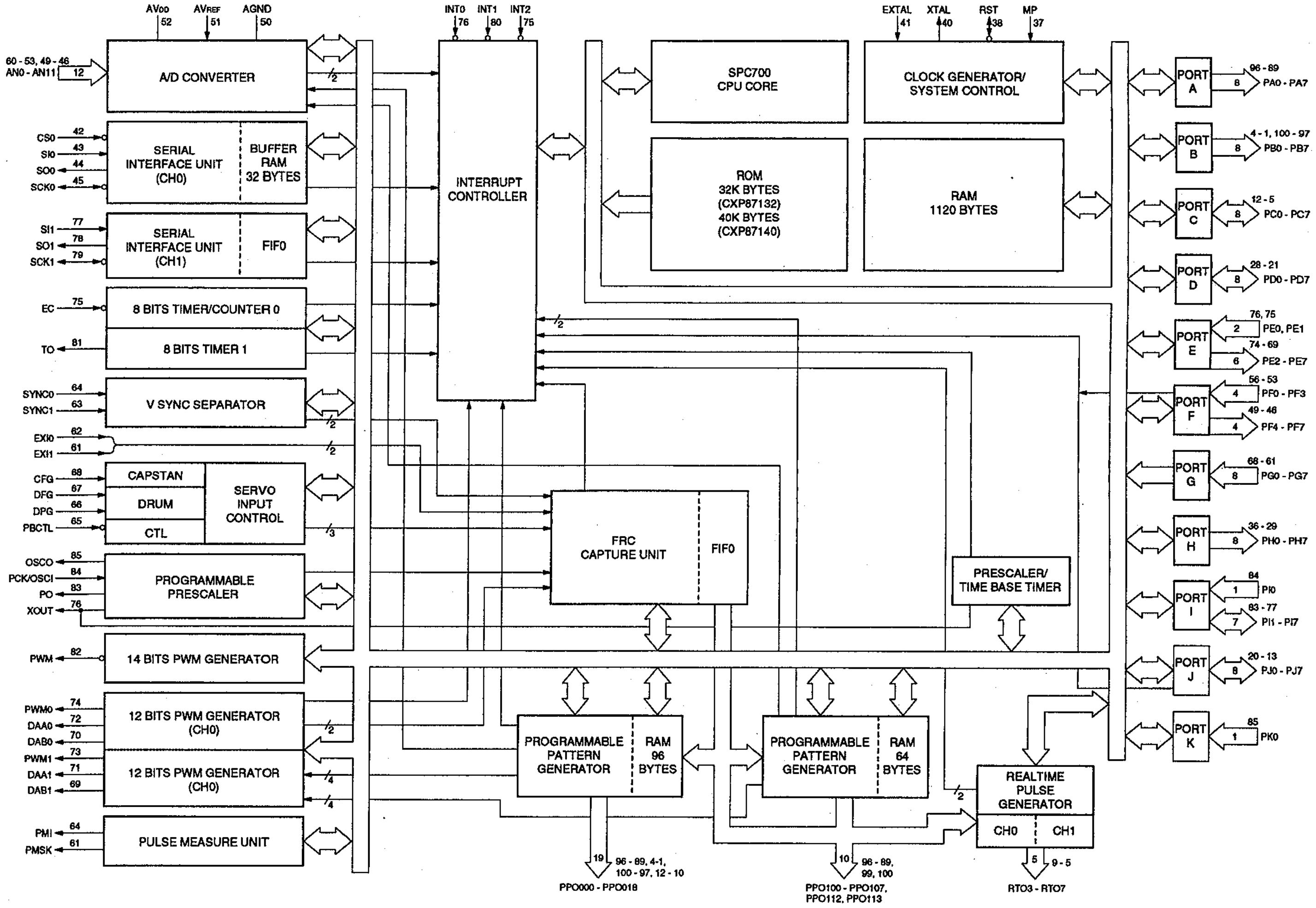
DAA0, DAB0 ; DA GATE PULSE OUTPUTS (12 BITS PWM CHANNEL 0)
DAA1, DAB1 ; DA GATE PULSE OUTPUTS (12 BITS PWM CHANNEL 1)
OSCO ; CRYSTAL CONNECTION OF OSCILLATION CIRCUIT FOR PRESCALER
PA0 - PA7 ; OUTPUTS OF PORT A
PB0 - PB7 ; OUTPUTS OF PORT B
PE2 - PE7 ; OUTPUTS OF PORT E (PE0, PE1 ; INPUTS)
PF4 - PF7 ; OUTPUTS OF PORT F (PF0 - PF3 ; INPUTS)
PH0 - PH7 ; OUTPUTS OF PORT H (N-CH OPEN DRAIN OUTPUTS)
PPO000 - PPO018 ; PPO100 - PPO107, PPO112, PPO113
; PROGRAMMABLE PATTERN GENERATOR OUTPUTS
PO ; PRESCALER OUTPUT
PWM ; PULSE WIDTH MODULATION OUTPUT
PWM0, PWM1 ; 12 BITS PULSE WIDTH MODULATION OUTPUTS (CHANNEL 0 AND CHANNEL 1)
RTO3 - RTO7 ; REALTIME PULSE GENERATOR OUTPUTS
SO0, SO1 ; SERIAL DATA OUTPUTS (CHANNEL 0 AND CHANNEL 1)
TO ; TIMER/COUNTER OUTPUT (DUTY 50%)
XOUT ; 1/2 DIVISION FREQUENCY OUTPUT OF XTAL OR OSCO
XTAL ; CRYSTAL CONNECTION FOR SYSTEM CLOCK GENERATOR

INPUT/OUTPUT

PC0 - PC7 ; INPUTS/OUTPUTS OF PORT C (BIT PROGRAMMABLE)
PD0 - PD7 ; INPUTS/OUTPUTS OF PORT D (4 BITS PROGRAMMABLE)
PI1 - PI7 ; INPUTS/OUTPUTS OF PORT I (BIT PROGRAMMABLE, PI0 ; INPUT)
PJ0 - PJ7 ; INPUTS/OUTPUTS OF PORT J (BIT PROGRAMMABLE)
RST ; SYSTEM RESET INPUT AND POWER ON RESET OUTPUT
SCK0, SCK1 ; SERIAL CLOCK INPUTS/OUTPUTS (CHANNEL 0 AND CHANNEL 1)

OTHER

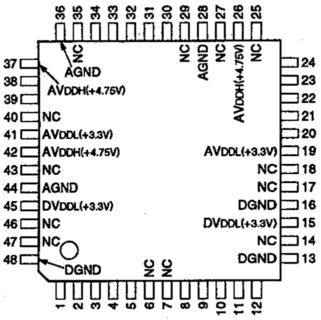
AGND ; A/D CONVERTER'S GROUND
AVDD (+5V) ; A/D CONVERTER'S VDD
AVREF ; A/D CONVERTER'S REFERENCE VOLTAGE INPUT


AVDD 52
AVREF 51
AGND 50
INT0 76
INT1 80
INT2 75
EXTAL 41
XTAL 40
RST 38
MP 37
60 - 53, 49 - 46
AN0 - AN11 12
A/D CONVERTER
CS0 42
SI0 43
SO0 44
SCK0 45
SERIAL INTERFACE UNIT (CH0)
BUFFER RAM 32 BYTES
SI1 77
SO1 78
SCK1 79
SERIAL INTERFACE UNIT (CH1)
FIFO
EC 75
8 BITS TIMER/COUNTER 0
TO 81
8 BITS TIMER 1
SYNC0 64
SYNC1 63
V SYNC SEPARATOR
EXI0 62
EXI1 61
CFG 68
DFG 67
DPG 66
PBCTL 65
CAPSTAN
DRUM
CTL
SERVO INPUT CONTROL
OSCO 85
PCK/OSCI 84
PO 83
XOUT 76
PROGRAMMABLE PRESCALER
PWM 82
14 BITS PWM GENERATOR
PWM0 74
DAA0 72
DAB0 70
PWM1 73
DAA1 71
DAB1 69
12 BITS PWM GENERATOR (CH0)
12 BITS PWM GENERATOR (CH0)
PMI 64
PMSK 61
PULSE MEASURE UNIT
INTERRUPT CONTROLLER
SPC700 CPU CORE
CLOCK GENERATOR/ SYSTEM CONTROL
ROM 32K BYTES (CXP87132) 40K BYTES (CXP87140)
RAM 1120 BYTES
FRC CAPTURE UNIT
FIFO
PRESCALER/ TIME BASE TIMER
PROGRAMMABLE PATTERN GENERATOR
RAM 96 BYTES
PROGRAMMABLE PATTERN GENERATOR
RAM 64 BYTES
REALTIME PULSE GENERATOR
CH0
CH1
19
96 - 89, 4-1, 100 - 97, 12 - 10
PPO000 - PPO018
10
96 - 89, 99, 100
PPO100 - PPO107, PPO112, PPO113
5
9 - 5
RTO3 - RTO7
PORT A
8
96 - 89
PA0 - PA7
PORT B
8
4 - 1, 100 - 97
PB0 - PB7
PORT C
8
12 - 5
PC0 - PC7
PORT D
8
28 - 21
PD0 - PD7
PORT E
2
76, 75
PE0, PE1
6
74 - 69
PE2 - PE7
PORT F
4
56 - 53
PF0 - PF3
4
49 - 46
PF4 - PF7
PORT G
8
68 - 61
PG0 - PG7
PORT H
8
36 - 29
PH0 - PH7
PORT I
1
84
PI0
7
83 - 77
PI1 - PI7
PORT J
8
20 - 13
PJ0 - PJ7
PORT K
1
85
PK0

HD49315AFEB (HITACHI)

C-MOS 10-BIT A/D CONVERTER

—TOP VIEW—


36
35
34
33
32
31
30
29
28
27
26
25
NC
AGND
NC
AGND
NC
AVDDH(+4.75V)
NC
37
38
39
40
41
42
43
44
45
46
47
48
AVDDH(+4.75V)
NC
AVDDL(+3.3V)
AVDDH(+4.75V)
NC
AGND
DVDDL(+3.3V)
NC
NC
DGND
24
23
22
21
20
19
18
17
16
15
14
13
AVDDL(+3.3V)
NC
NC
DGND
DVDDL(+3.3V)
NC
DGND
NC
NC
1
2
3
4
5
6
7
8
9
10
11
12

(AVDDH = +4.75V)
(AVDDL, DVDDL = +3.3V)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	O	D0	13	—	DGND	25	—	NC	37	—	AVDDH
2	O	D1	14	—	NC	26	—	AVDDH	38	—	BIAS
3	O	D2	15	—	DVDDL	27	—	NC	39	I	VIN
4	O	D3	16	—	DGND	28	—	AGND	40	—	NC
5	O	D4	17	—	NC	29	—	NC	41	—	AVDDL
6	—	NC	18	—	NC	30	I	VRT	42	—	AVDDH
7	—	NC	19	—	AVDDL	31	—	VR1	43	—	NC
8	O	D5	20	I	LINV	32	—	VR2	44	—	AGND
9	O	D6	21	I	MINV	33	—	VR3	45	—	DVDDL
10	O	D7	22	I	CLK	34	I	VRB	46	—	NC
11	O	D8	23	I	TEST	35	—	NC	47	—	NC
12	O	D9	24	I	STBY	36	—	AGND	48	—	DGND

INPUT

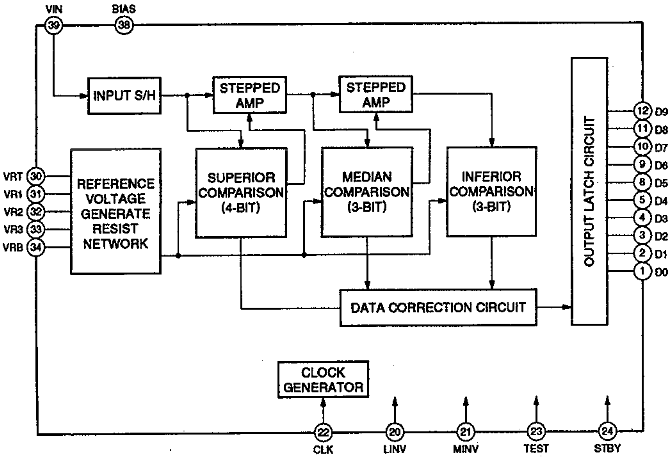
CLK ; CLOCK
LINV, MINV ; DIGITAL OUT INVERT CONTROL
STBY ; STANDBY MODE CONTROL
TEST ; TEST MODE CONTROL
VIN ; ANALOG
VR1 - VR3 ; REFERENCE VOLTAGE MEDIUM TAP
VRB ; REFERENCE VOLTAGE LOWER SIDE
VRT ; REFERENCE VOLTAGE HIGH SIDE

OUTPUT

D0 - D9 ; DIGITAL

OTHER

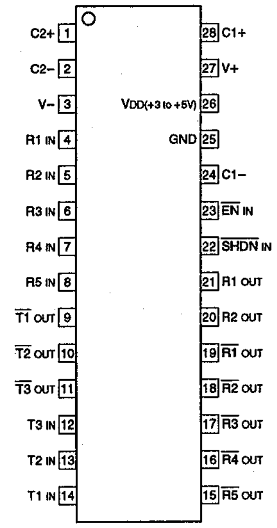
BIAS ; BIAS


VIN
BIAS
39
38
INPUT S/H
STEPPED AMP
STEPPED AMP
VRT 30
VR1 31
VR2 32
VR3 33
VRB 34
REFERENCE VOLTAGE GENERATE RESIST NETWORK
SUPERIOR COMPARISON (4-BIT)
MEDIAN COMPARISON (3-BIT)
INFERIOR COMPARISON (3-BIT)
OUTPUT LATCH CIRCUIT
12 D9
11 D8
10 D7
9 D6
8 D5
5 D4
4 D3
3 D2
2 D1
1 D0
DATA CORRECTION CIRCUIT
CLOCK GENERATOR
22 CLK
20 LINV
21 MINV
23 TEST
24 STBY

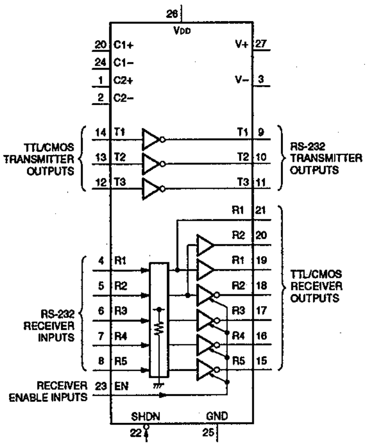
MAX3241CAI-TE2 (MAXIM)

C-MOS 3.0V TO 5.5V POWERED RA-232 DRIVER/RECEIVER

—TOP VIEW—


C2+ 1
C2− 2
V− 3
R1 IN 4
R2 IN 5
R3 IN 6
R4 IN 7
R5 IN 8
T1 OUT 9
T2 OUT 10
T3 OUT 11
T3 IN 12
T2 IN 13
T1 IN 14
28 C1+
27 V+
VDD(+3 to +5V) 26
GND 25
24 C1−
23 EN IN
22 SHDN IN
21 R1 OUT
20 R2 OUT
19 R1 OUT
18 R2 OUT
17 R3 OUT
16 R4 OUT
15 R5 OUT

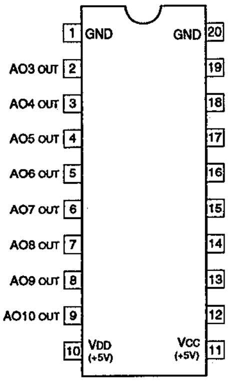
EN ; RECEIVER ENABLE
R ; RS-232 RECEIVER
SHDN ; SHUTDOWN CONTROL
T ; RS-232 TRANSMITTER

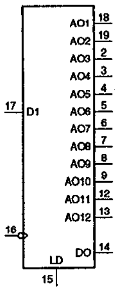

26
VDD
20 C1+
24 C1−
1 C2+
2 C2−
V+ 27
V− 3
TTL/CMOS TRANSMITTER OUTPUTS
14 T1
13 T2
12 T3
T1 9
T2 10
T3 11
RS-232 TRANSMITTER OUTPUTS
R1 21
R2 20
R1 19
R2 18
R3 17
R4 16
R5 15
TTL/CMOS RECEIVER OUTPUTS
RS-232 RECEIVER INPUTS
4 R1
5 R2
6 R3
7 R4
8 R5
RECEIVER ENABLE INPUTS
23 EN
SHDN
GND
22
25

MB88346BPFV (FUJITSU)FLAT PACKAGE(SMALL)
MB88346BPFV-EF

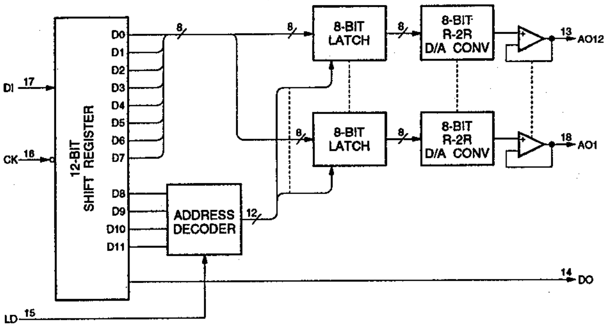
C-MOS 8-BIT D/A CONVERTER

—TOP VIEW—


1 GND
GND 20
AO3 OUT 2
19 AO2 OUT
AO4 OUT 3
18 AO1 OUT
AO5 OUT 4
17 DI IN
AO6 OUT 5
16 CK IN
AO7 OUT 6
15 LD IN
AO8 OUT 7
14 DO OUT
AO9 OUT 8
13 AO12 OUT
AO10 OUT 9
12 AO11 OUT
10 VDD (+5V)
VCC (+5V) 11


AO1 18
AO2 19
AO3 2
AO4 3
AO5 4
AO6 5
AO7 6
AO8 7
AO9 8
AO10 9
AO11 12
AO12 13
17 D1
16
LD
DO 14
15

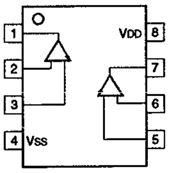
AO1 - AO12 ; 8-BIT D/A OUTPUTS
CK ; CLOCK INPUT
DI ; SERIAL DATA INPUT
DO ; DATA OUTPUT
LD ; DATA LOAD CONTROL INPUT (H ; LOAD)


DI 17
CK 16
12-BIT SHIFT REGISTER
D0
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
8
8
8-BIT LATCH
8-BIT R-2R D/A CONV
13 AO12
8
8-BIT LATCH
8-BIT R-2R D/A CONV
18 AO1
ADDRESS DECODER
12
14 DO
LD 15

MC14577CF (MOTOROLA)FLAT PACKAGE
MC14577CFEL

C-MOS DUAL VIDEO AMPLIFIERS

—TOP VIEW—

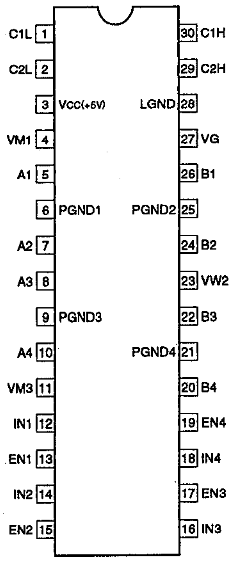

1
2
3
4 VSS
VDD 8
7
6
5

*VDD + | VSS | = +5V to +12V

MPC17A34RVMEL (MOTOROLA)

4-CH H BRIDGE MOTOR DRIVER

—TOP VIEW—

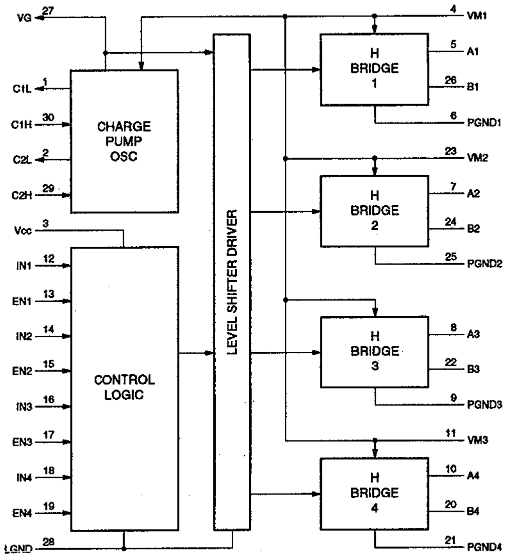

C1L 1
C2L 2
3 VCC(+5V)
VM1 4
A1 5
6 PGND1
A2 7
A3 8
9 PGND3
A4 10
VM3 11
IN1 12
EN1 13
IN2 14
EN2 15
30 C1H
29 C2H
LGND 28
27 VG
26 B1
PGND2 25
24 B2
23 VW2
22 B3
PGND4 21
20 B4
19 EN4
18 IN4
17 EN3
16 IN3

INPUT
CH1, CH2 ; CAPACITOR FOR CHARGE PUMP
EN1 - EN4 ; ENABLE CONTROL
IN1 - IN4 ; SENSE OF ROTATION CONTROL
VM1 - VM3 ; POWER FOR MOTOR

OUTPUT
C1L, C2L ; CAPACITOR FOR CHARGE PUMP
VG ; CHARGE PUMP

INPUT/OUTPUT
A1 - A4, B1 - B4 ; MOTOR

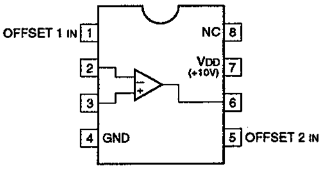
OTHER
LGND ; LOGIC GROUND
PGND1 - PGND2 ; POWER GROUND


VG 27
C1L 1
C1H 30
C2L 2
C2H 29
Vcc 3
IN1 12
EN1 13
IN2 14
EN2 15
IN3 16
EN3 17
IN4 18
EN4 19
LGND 28
CHARGE PUMP OSC
CONTROL LOGIC
LEVEL SHIFTER DRIVER
H BRIDGE 1
H BRIDGE 2
H BRIDGE 3
H BRIDGE 4
4 VM1
5 A1
26 B1
6 PGND1
23 VM2
7 A2
24 B2
25 PGND2
8 A3
22 B3
9 PGND3
11 VM3
10 A4
20 B4
21 PGND4

NJU7021V-TE2 (JRC)FLAT PACKAGE

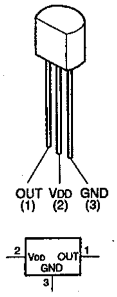
C-MOS OPERATION AMPLIFIER

—TOP VIEW—


OFFSET 1 IN 1
2
3
4 GND
NC 8
VDD (+10V) 7
6
5 OFFSET 2 IN
-
+

S-8052ALY (SEIKO I AND E)2.60 V_2.80 V
S-8052ALY-LH-T1

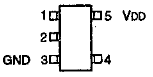
C-MOS VOLTAGE DETECTOR

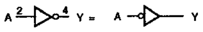

OUT (1)
VDD (2)
GND (3)
2 VDD
OUT 1
GND 3

SC7S04F (MOTOROLA)CHIP PACKAGE
TC4SU69F (TOSHIBA)CHIP PACKAGE
TC4SU69F(TE85R)
TC7S04F(TE85R)
TC7S04FU(TE85R) (TOSHIBA)FLAT PACKAGE
TC7SH04FU (TOSHIBA)CHIP PACKAGE
TC7SH04FU-TE85R
TC7SHU04FU-TE85R (TOSHIBA)CHIP PACKAGE

C-MOS INVERTER

—TOP VIEW—


1
5 VDD
2
GND 3
4



$Y = \overline{A}$

A	Y
0	1
1	0

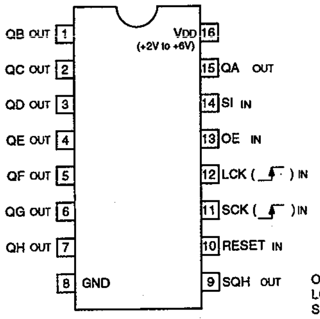
0 ; LOW LEVEL
1 ; HIGH LEVEL

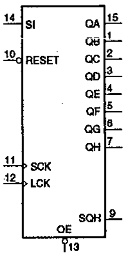
TYPE	VDD
7S04F 7SU04F 7SU04FU	+2 to +6V
4S69F 4SU69F	+3 to +18V
7SH04FU 7SHU04FU	+2 to +5.5V

SN74HC595ADB-E05 (TI)FLAT PACKAGE(SMALL)

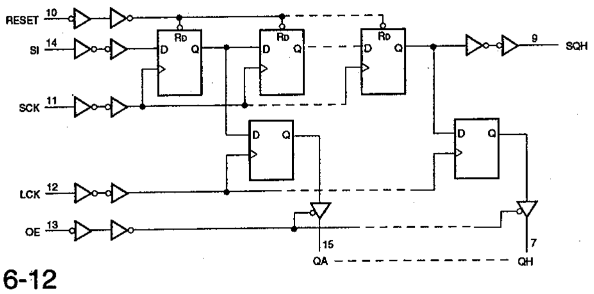
C-MOS 8-BIT SERIAL-INPUT/SERIAL- OR PARALLEL-OUTPUT SHIFT REGISTER WITH LATCHED 3-STATE OUTPUT

—TOP VIEW—


QB OUT 1
QC OUT 2
QD OUT 3
QE OUT 4
QF OUT 5
QG OUT 6
QH OUT 7
8 GND
VDD 16
(+2V to +6V)
15 QA OUT
14 SI IN
13 OE IN
12 LCK ( ) IN
11 SCK ( ) IN
10 RESET IN
9 SQH OUT


14 SI
10 RESET
11 SCK
12 LCK
QA 15
QB 1
QC 2
QD 3
QE 4
QF 5
QG 6
QH 7
SQH 9
OE
13

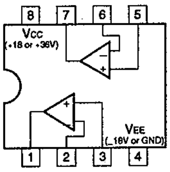
OE ; OUTPUT ENABLE INPUT
LCK ; LATCH CLOCK INPUT
SCK ; SHIFT CLOCK INPUT
RESET ; SHIFT-REGISTER RESET INPUT
SI ; SERIAL IN
QA - QH ; PARALLEL OUTPUT
SQH ; SERIAL OUT


RESET 10
SI 14
SCK 11
LCK 12
OE 13
RD
D
Q
9
SQH
15
QA
7
QH

TA75W393FU (TOSHIBA)
TA75W393FU-TE12R

DUAL COMPARATORS

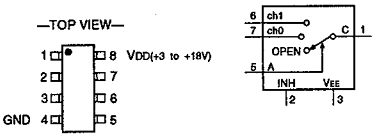
—TOP VIEW—


8
7
6
5
Vcc
(+18 or +36V)
VEE
(-18V or GND)
1
2
3
4

TC4W53FU (TOSHIBA)CHIP PACKAGE
TC4W53FU(TE12R)

C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER

—TOP VIEW—


1
2
3
GND 4
8 VDD(+3 to +18V)
7
6
5
6 ch1
7 ch0
C 1
OPEN
5 A
INH
VEE
2
3

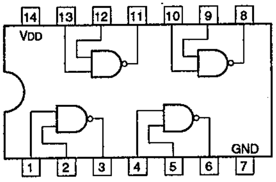
0 ; LOW LEVEL
1 ; HIGH LEVEL
x ; DON'T CARE

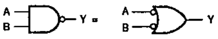
CONT.INPUT		ON CHANNEL
INH	A	
0	0	ch0
0	1	ch1
1	x	OPEN

TC74VHC00FS(EL) (TOSHIBA)FLAT PACKAGE(SMALL)

C-MOS QUAD 2-INPUT NAND GATES

—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

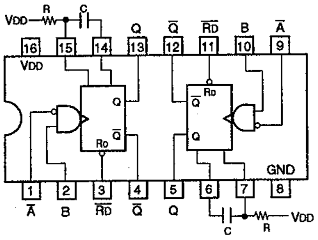
NOTE:

TYPE	VDD
74AC/74VHC	+2 to +5.5V
74ACT/74HCT/74VHCT	+4.5 to +5.5V
LCX	+2 to +3.6V
OTHER TYPES	+2 to +6V

TC74VHC123AFS(EL) (TOSHIBA)FLAT PACKAGE

C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS

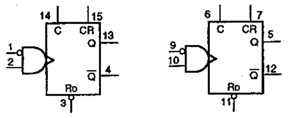
—TOP VIEW—


VDD
R
C
Q
Q̄
R̄D
B
Ā
16
15
14
13
12
11
10
9
VDD
RD
Q
Q̄
GND
1
2
3
4
5
6
7
8
Ā
B
R̄D
Q̄
Q
C
R
VDD

INPUTS			OUTPUTS	
RD	A	B	Q	$\overline{Q}$
0	x	x	0	1
1	1	x	0	1
1	x	0	0	1
1	0	↑	⎍	⊔
1	↓	1	⎍	⊔
↑	0	1	⎍	⊔

0 ; LOW LEVEL
1 ; HIGH LEVEL
x ; DON'T CARE

OUTPUT PULSE WIDTH ≐ 0.46 CR


14
15
C
CR
13
Q
1
2
Q̄
4
RD
3
6
7
C
CR
5
Q
9
10
Q̄
12
RD
11

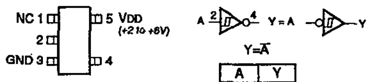
NOTE :

TYPE	VDD
TC74HC123AF	+5V
TC74VHC	+2V to +5.5V
OTHER TYPES	+2V to +6V

TC7S14FU(TE85R)

C-MOS SCHMITT INVERTER

—TOP VIEW—


NC 1
2
GND 3
5 VDD
(+2 to +6V)
4
A
2
4
Y = A
Y

$Y=\overline{A}$

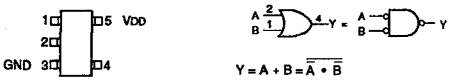
A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC7S32FU(TE85R) (TOSHIBA)FLAT PACKAGE

C-MOS 2-INPUT OR GATE

—TOP VIEW—


1
2
GND 3
5 VDD
4
A
B
2
1
Y
=
A
B
Y

$Y = A + B = \overline{\overline{A}\cdot\overline{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

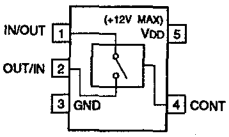
0 ; LOW LEVEL
1 ; HIGH LEVEL

TYPE	VDD
7S32F 7S32FU	+2 to +6V
4S71F	+3 to +18V
7SH32FU	+2 to +5.5V

TC7S66FU (TOSHIBA)
TC7S66FU(TE85R)

C-MOS ANALOG SWITCH

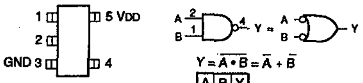
—TOP VIEW—


IN/OUT 1
OUT/IN 2
3 GND
(+12V MAX)
VDD 5
4 CONT

TC7SH00FU-TE85R (TOSHIBA)FLAT PACKAGE

C-MOS 2-INPUT NAND GATE

—TOP VIEW—


1
2
GND 3
5 VDD
4
A
B
2
1
4
Y
=
A
B
Y

$Y = \overline{A\cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

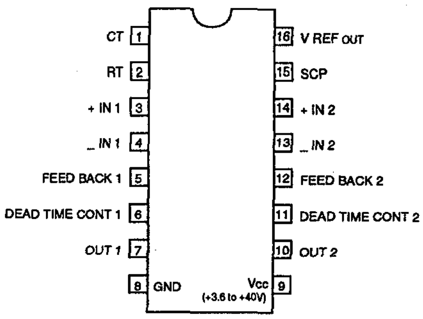
0 ; LOW LEVEL
1 ; HIGH LEVEL

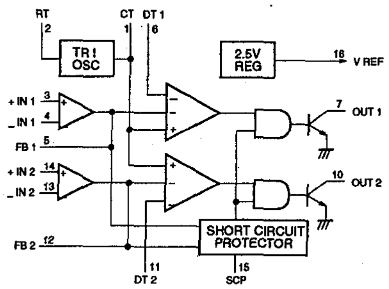
TYPE	VDD
7S00F 7S00FU	+2 to +6V
4S11F 4SU11F	+3 to +18V
7SH00FU	+2 to +5.5V

TL1451ACPW-E20 (TI)

DUAL PWM POWER CONTROLLER

—TOP VIEW—

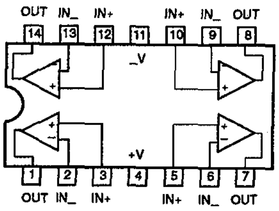

CT 1
RT 2
+ IN 1 3
_ IN 1 4
FEED BACK 1 5
DEAD TIME CONT 1 6
OUT 1 7
8 GND
16 V REF OUT
15 SCP
14 + IN 2
13 _ IN 2
12 FEED BACK 2
11 DEAD TIME CONT 2
10 OUT 2
Vcc 9
(+3.6 to +40V)


RT
2
CT
1
DT 1
6
TR I
OSC
2.5V
REG
16
V REF
+ IN 1
3
_ IN 1
4
FB 1
5
+ IN 2
14
_ IN 2
13
FB 2
12
7
OUT 1
10
OUT 2
SHORT CIRCUIT
PROTECTOR
11
DT 2
15
SCP

UPC324G2 (NEC)FLAT PACKAGE
UPC324G2-E2

QUAD OPERATIONAL AMPLIFIERS

—TOP VIEW—

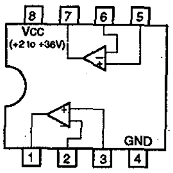

OUT
IN_
IN+
IN+
IN_
OUT
14
13
12
11
10
9
8
_V
+V
1
2
3
4
5
6
7
OUT
IN_
IN+
IN+
IN_
OUT

	+V	_V
SINGLE SUPPLY	+3 to +32V	GND
DUAL SUPPLIES	+1.5 to +16V	_1.5 to _16V

UPC393G2 (NEC)FLAT PACKAGE
UPC393G2-T2

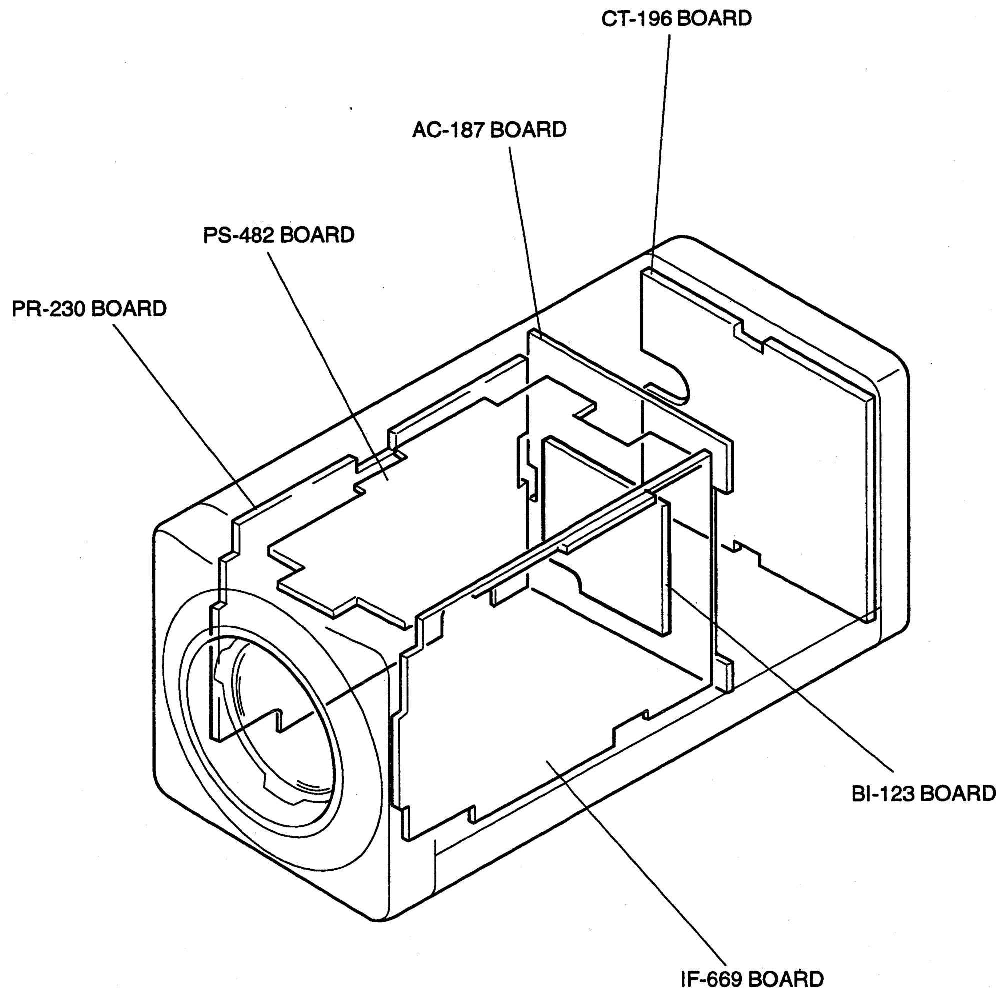
DUAL VOLTAGE COMPARATORS

—TOP VIEW—


8
7
6
5
Vcc
(+2 to +36V)
GND
1
2
3
4

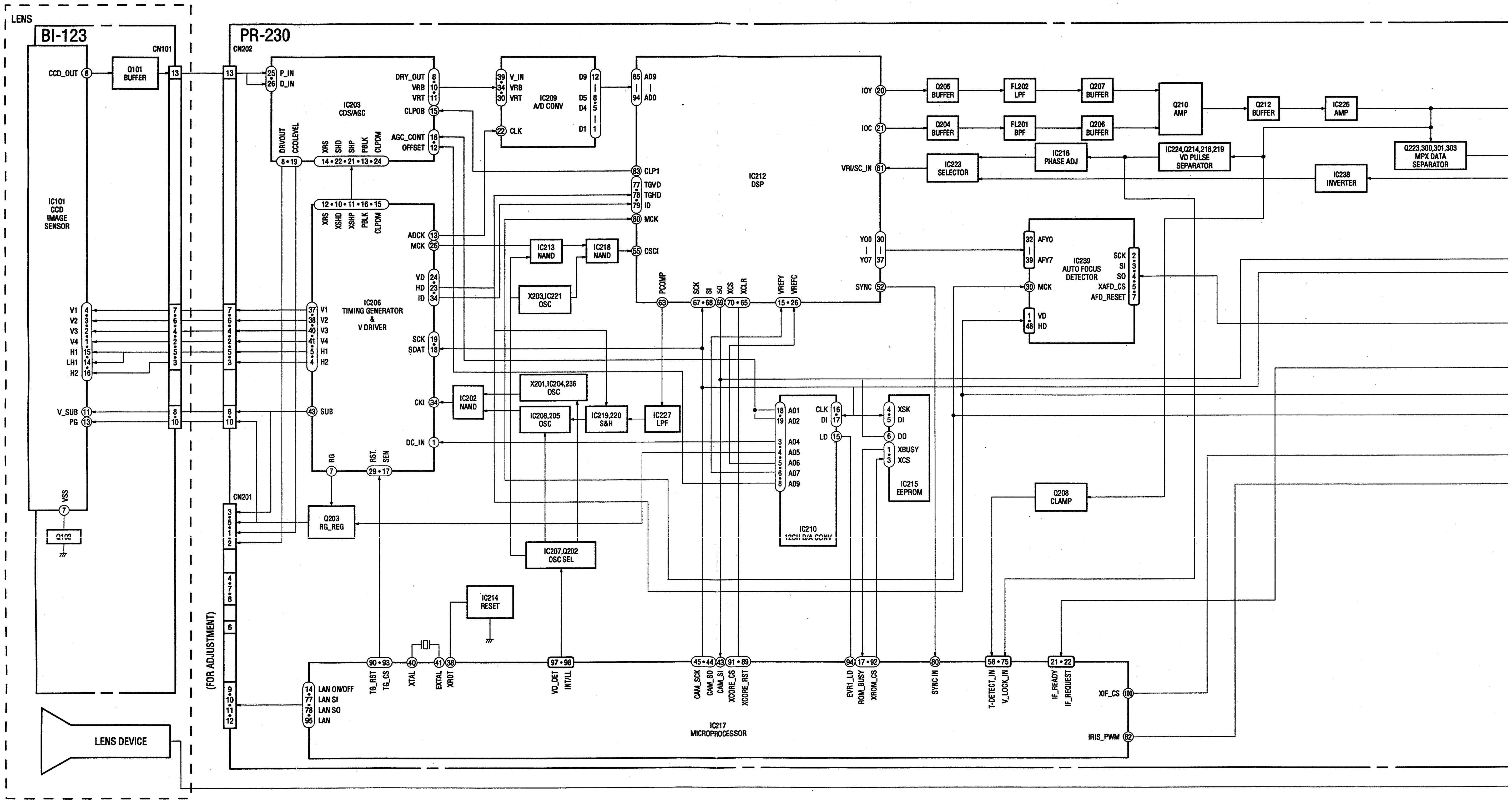
SECTION 7
DIAGRAMS

7-1. BOARD LOCATION


CT-196 BOARD
AC-187 BOARD
PS-482 BOARD
PR-230 BOARD
BI-123 BOARD
IF-669 BOARD

1

7-2. BLOCK DIAGRAM


LENS
BI-123
CN101
CCD_OUT
Q101 BUFFER
IC101 CCD IMAGE SENSOR
V1
V2
V3
V4
H1
LH1
H2
V_SUB
PG
VSS
Q102
LENS DEVICE
PR-230
CN202
P_IN
D_IN
IC203 CDS/AGC
DRVOUT
CCDLEVEL
XRS
SHD
SHP
PBLK
CLPDM
DRY_OUT
VRB
VRT
CLPOB
AGC_CONT
OFFSET
V_IN
IC209 A/D CONV
CLK
D9
D5
D4
D1
AD9
AD0
IC212 DSP
CLP1
TGVD
TGHD
ID
MCK
OSCI
PCOMP
SCK
SI
SO
XCS
XCLR
VREFY
VREFC
IOY
IOC
VRI/SC_IN
Y00
Y07
SYNC
IC206 TIMING GENERATOR & V DRIVER
XSHD
XSHP
ADCK
VD
HD
SDAT
CKI
SUB
DC_IN
RG
RST
SEN
IC213 NAND
IC218 NAND
X203,IC221 OSC
IC202 NAND
X201,IC204,236 OSC
IC208,205 OSC
IC219,220 S&H
IC227 LPF
IC207,Q202 OSC SEL
IC214 RESET
CN201
Q203 RG_REG
(FOR ADJUSTMENT)
IC210 12CH D/A CONV
A01
A02
A04
A05
A06
A07
A09
DI
LD
IC215 EEPROM
XSK
DO
XBUSY
Q205 BUFFER
Q204 BUFFER
FL202 LPF
FL201 BPF
Q207 BUFFER
Q206 BUFFER
Q210 AMP
Q212 BUFFER
IC226 AMP
IC216 PHASE ADJ
IC223 SELECTOR
IC224,Q214,218,219 VD PULSE SEPARATOR
Q223,300,301,303 MPX DATA SEPARATOR
IC238 INVERTER
IC239 AUTO FOCUS DETECTOR
AFY0
AFY7
XAFD_CS
AFD_RESET
Q208 CLAMP
IC217 MICROPROCESSOR
LAN ON/OFF
LAN SI
LAN SO
LAN
TG_RST
TG_CS
XTAL
EXTAL
XRDT
VD_DET
INT/LL
CAM_SCK
CAM_SO
CAM_SI
XCORE_CS
XCORE_RST
EVR1_LD
ROM_BUSY
XROM_CS
SYNC IN
T-DETECT_IN
V_LOCK_IN
IF_READY
IF_REQUEST
XIF_CS
IRIS_PWM

2

3

4

5

A | B | C | D | E | F | G | H

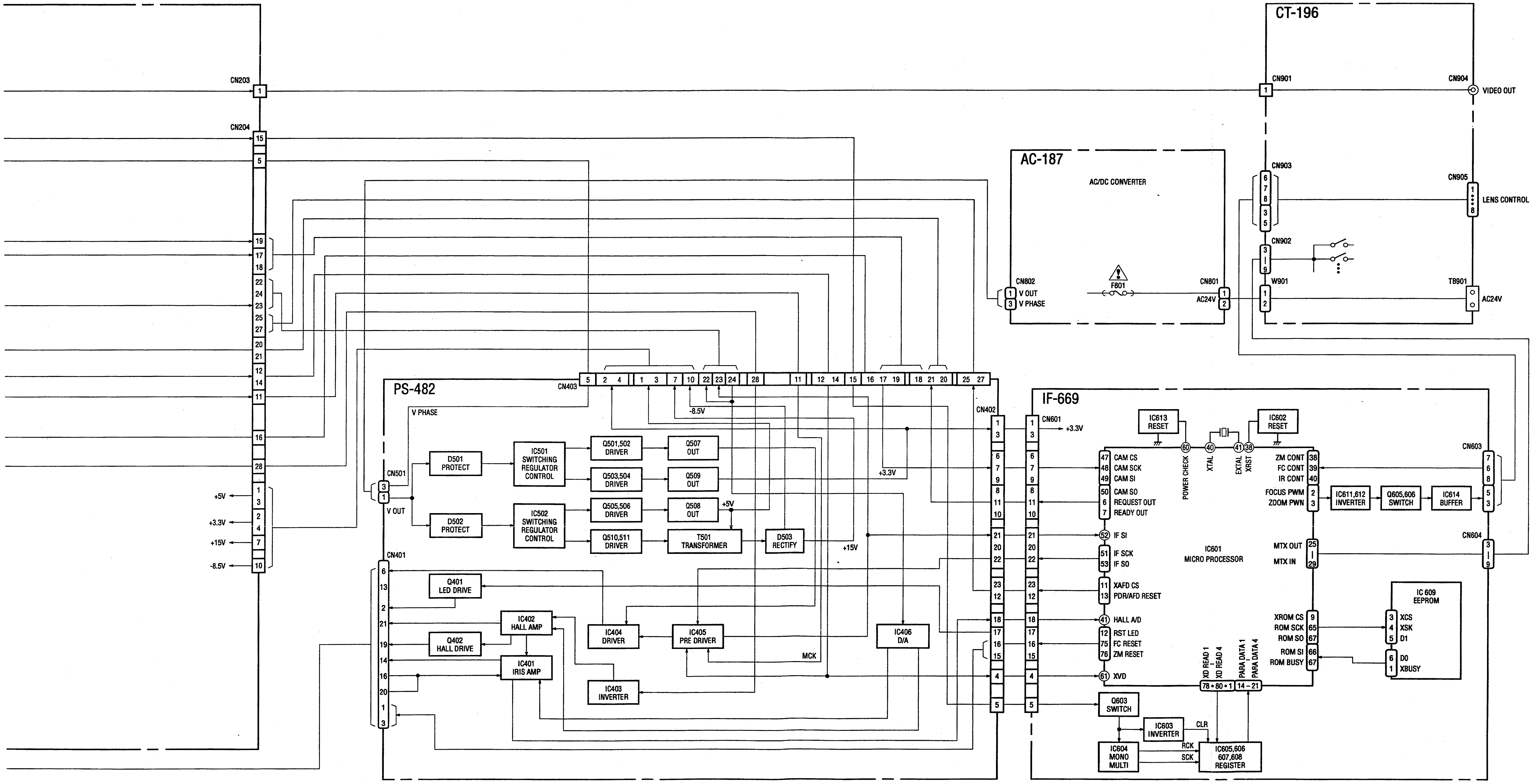
1

2

3

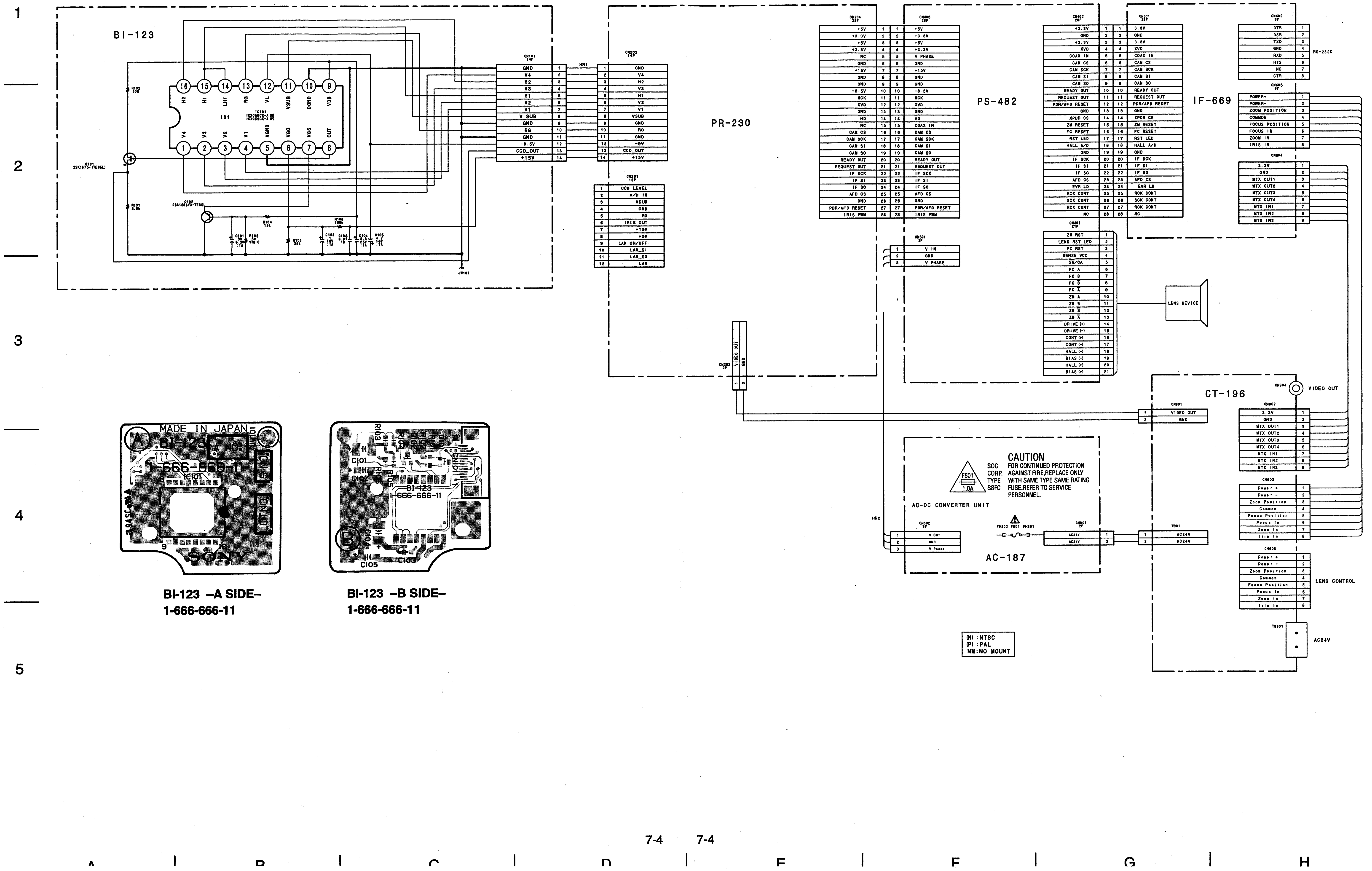
4

5


CN203
CN204
CT-196
CN901
CN904
VIDEO OUT
AC-187
AC/DC CONVERTER
CN903
CN905
LENS CONTROL
CN902
W901
TB901
AC24V
CN802
V OUT
V PHASE
F801
CN801
AC24V
+5V
+3.3V
+15V
-8.5V
PS-482
CN403
V PHASE
-8.5V
CN402
CN501
V OUT
D501
PROTECT
D502
PROTECT
IC501
SWITCHING
REGULATOR
CONTROL
IC502
SWITCHING
REGULATOR
CONTROL
Q501,502
DRIVER
Q503,504
DRIVER
Q505,506
DRIVER
Q510,511
DRIVER
Q507
OUT
Q509
OUT
Q508
OUT
+5V
T501
TRANSFORMER
D503
RECTIFY
+15V
+3.3V
CN401
Q401
LED DRIVE
Q402
HALL DRIVE
IC402
HALL AMP
IC401
IRIS AMP
IC404
DRIVER
IC405
PRE DRIVER
IC403
INVERTER
IC406
D/A
MCK
IF-669
CN601
+3.3V
IC613
RESET
IC602
RESET
POWER CHECK
XTAL
EXTAL
XRST
CAM CS
CAM SCK
CAM SI
CAM SO
REQUEST OUT
READY OUT
IF SI
IF SCK
IF SO
XAFD CS
PDR/AFD RESET
HALL A/D
RST LED
FC RESET
ZM RESET
XVD
ZM CONT
FC CONT
IR CONT
FOCUS PWM
ZOOM PWN
MTX OUT
MTX IN
XROM CS
ROM SCK
ROM SO
ROM SI
ROM BUSY
XD READ 1
XD READ 4
PARA DATA 1
PARA DATA 4
78 • 80 • 1
14 – 21
IC601
MICRO PROCESSOR
IC611,612
INVERTER
Q605,606
SWITCH
IC614
BUFFER
CN603
CN604
IC 609
EEPROM
XCS
XSK
D1
D0
XBUSY
Q603
SWITCH
IC603
INVERTER
CLR
IC604
MONO
MULTI
RCK
SCK
IC605,606
607,608
REGISTER

I | J | K | L | M | N | O | P

7-3. SCHEMATIC DIAGRAMS AND PRINTED CIRCUIT BOARDS
FRAME, BI-123 BOARD

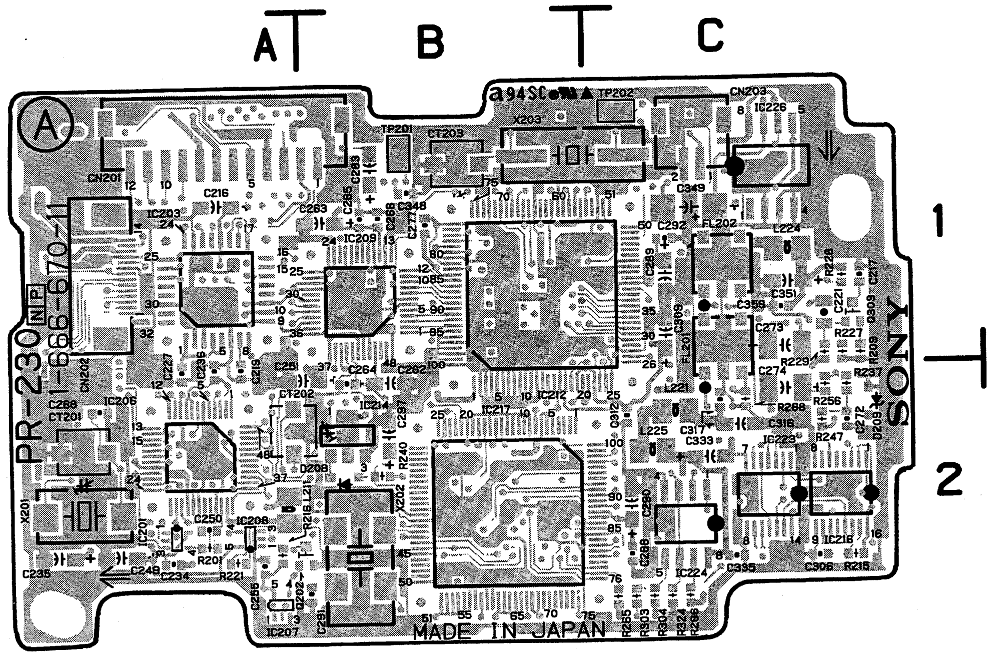

1
2
3
4
5
A
B
C
D
E
F
G
H
BI-123
IC101 ICX058CK-A (N) ICX058CK-A (P)
H2
H1
LH1
RG
VL
VSUB
DGND
VDD
V4
V3
V2
V1
AGND
VGG
VSS
OUT
Q101 2SK1875-(TE85L)
Q102 2SA1586YG-TE85L
R101 3.9k
R102 100
R103
R104 15k
R105 39k
R106 100k
C101
C102
C103
C104
C105
JW101
CN101 14P
HN1
CN202 14P
GND
V4
H2
V3
H1
V2
V1
V SUB
RG
-8.5V
CCD_OUT
+15V
CN201 12P
CCD LEVEL
A/D IN
IRIS OUT
+5V
LAN ON/OFF
LAN_SI
LAN_SO
LAN
PR-230
CN204 28P
CN403 28P
PS-482
CN402 28P
CN601 28P
IF-669
CN602 8P
DTR
DSR
TXD
RXD
RTS
NC
CTR
RS-232C
CN603 8P
POWER+
POWER-
ZOOM POSITION
COMMON
FOCUS POSITION
FOCUS IN
ZOOM IN
IRIS IN
CN604
3.3V
MTX OUT1
MTX OUT2
MTX OUT3
MTX OUT4
MTX IN1
MTX IN2
MTX IN3
CN401 21P
LENS DEVICE
CN501 3P
V IN
V PHASE
CN203 2P
VIDEO OUT
CN904
VIDEO OUT
CT-196
CN901
CN902
CN903
CN905
LENS CONTROL
TB901
AC24V
HN2
CN802 3P
V OUT
CN801 2P
FH802 F801 FH801
AC-DC CONVERTER UNIT
AC-187
W901
CAUTION
F801 1.0A
SOC CORP. TYPE SSFC
FOR CONTINUED PROTECTION AGAINST FIRE,REPLACE ONLY WITH SAME TYPE SAME RATING FUSE.REFER TO SERVICE PERSONNEL.
(N) :NTSC
(P) :PAL
NM:NO MOUNT

MADE IN JAPAN
A
BI-123
A NO.
1-666-666-11
IC101
CN101
SONY

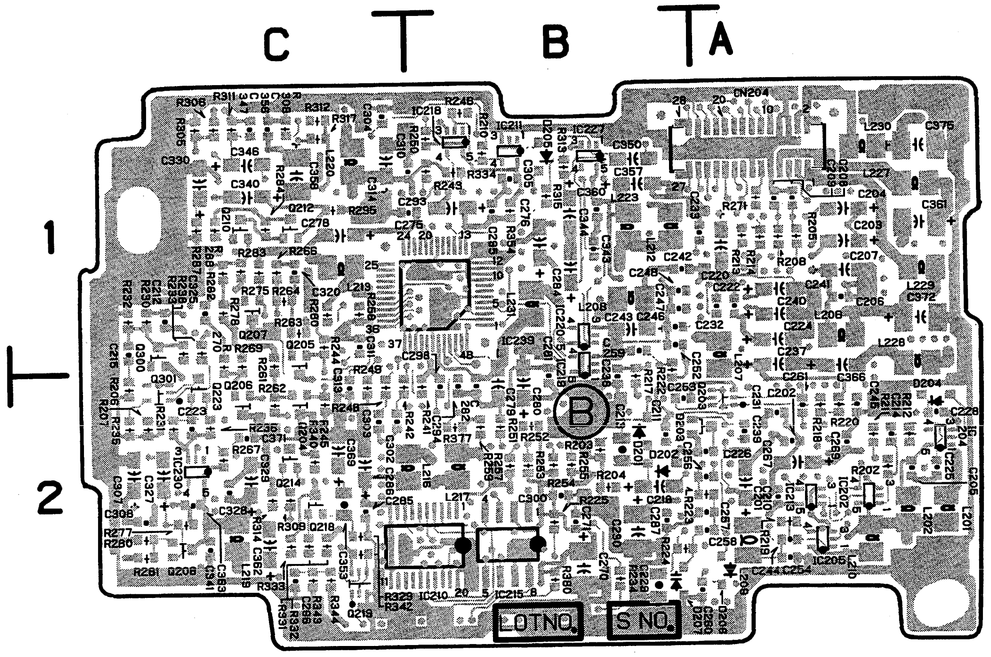
BI-123 -A SIDE-
1-666-666-11

R103
R101
R102
Q101
Q102
C101
C102
R106
R105
BI-123
1-666-666-11
B
R104
C105
C103

BI-123 -B SIDE-
1-666-666-11



PR-230 — A SIDE —
1-666-670-11



PR-230 — B SIDE —
1-666-670-11

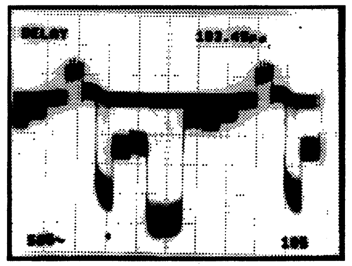
PR-230

* : B SIDE

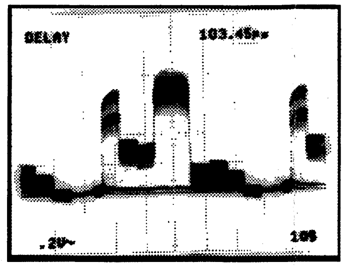
CN201	A1
CN202	A1
CN203	C1
CN204	*A1
CT201	A2
CT202	A2
CT203	B1
D201	*B2
D202	*B2
D203	*A2
D204	*A2
D205	*B1
D206	*A2
D207	*B2
D208	B2
D209	C2
FL201	C1
FL202	C1
IC201	A2
IC202	*A2
IC203	A1
IC204	*A2
IC205	*A2
IC206	A2
IC207	A2
IC208	A2
IC209	B1
IC210	*B2
IC211	*B1
IC212	B1
IC213	*A2
IC214	B2
IC215	*B2
IC216	C2
IC217	B2
IC218	*B1
IC219	*B1
IC220	*B1
IC223	C2
IC224	C2
IC226	C1
IC227	*B1
IC230	*C2
IC239	*B1
L201	*A2
L202	*A2
L206	*A1
L207	*A1
L208	*B1
L209	*A2
L210	*A2
L211	A2
L212	*B1
L213	*C1
L216	*C2
L217	*B2
L219	*C2
L220	*C1
L221	C2
L223	*B1
L224	C1
L225	C2
L227	*A1
L228	*A2
L229	*A1
L230	*A1
L231	*B1
Q202	B2
Q203	*A2
Q204	*C2
Q205	*C1
Q206	*C2
Q207	*C1
Q208	*C2
Q210	*C1
Q212	*C1
Q214	*C2
Q218	*C2
Q219	*C2
Q223	*C2
Q300	*C1
Q301	*C2
Q303	C1
TP201	B1
TP202	C1
X201	A2
X202	B2
X203	B1

Waveform —PR-230—

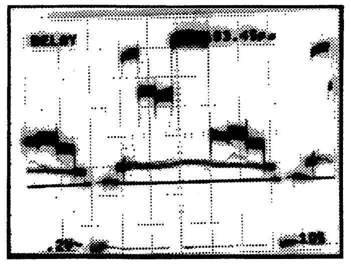
①



②



③



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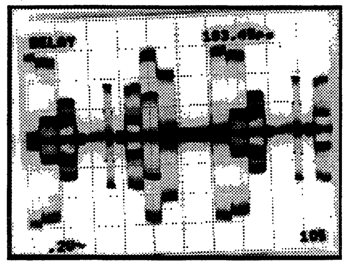

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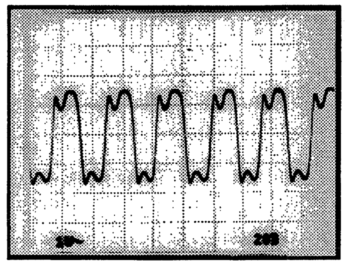

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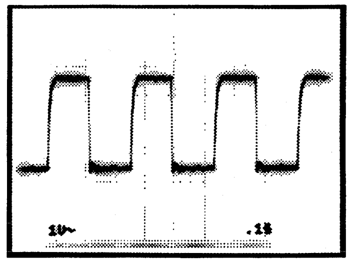
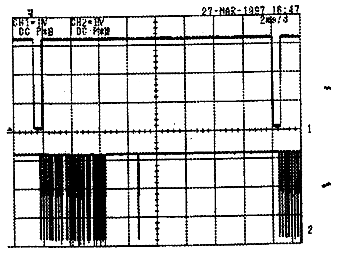
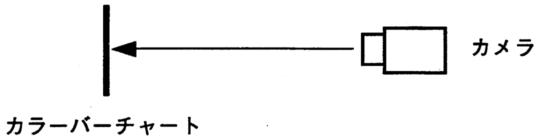


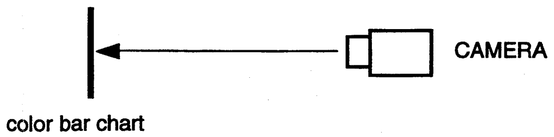
⑦
⑧



- ・波形図は、オシロスコープで測定した参考図。
- ・〇番号は波形図の照合番号。
- ・波形図の測定条件。

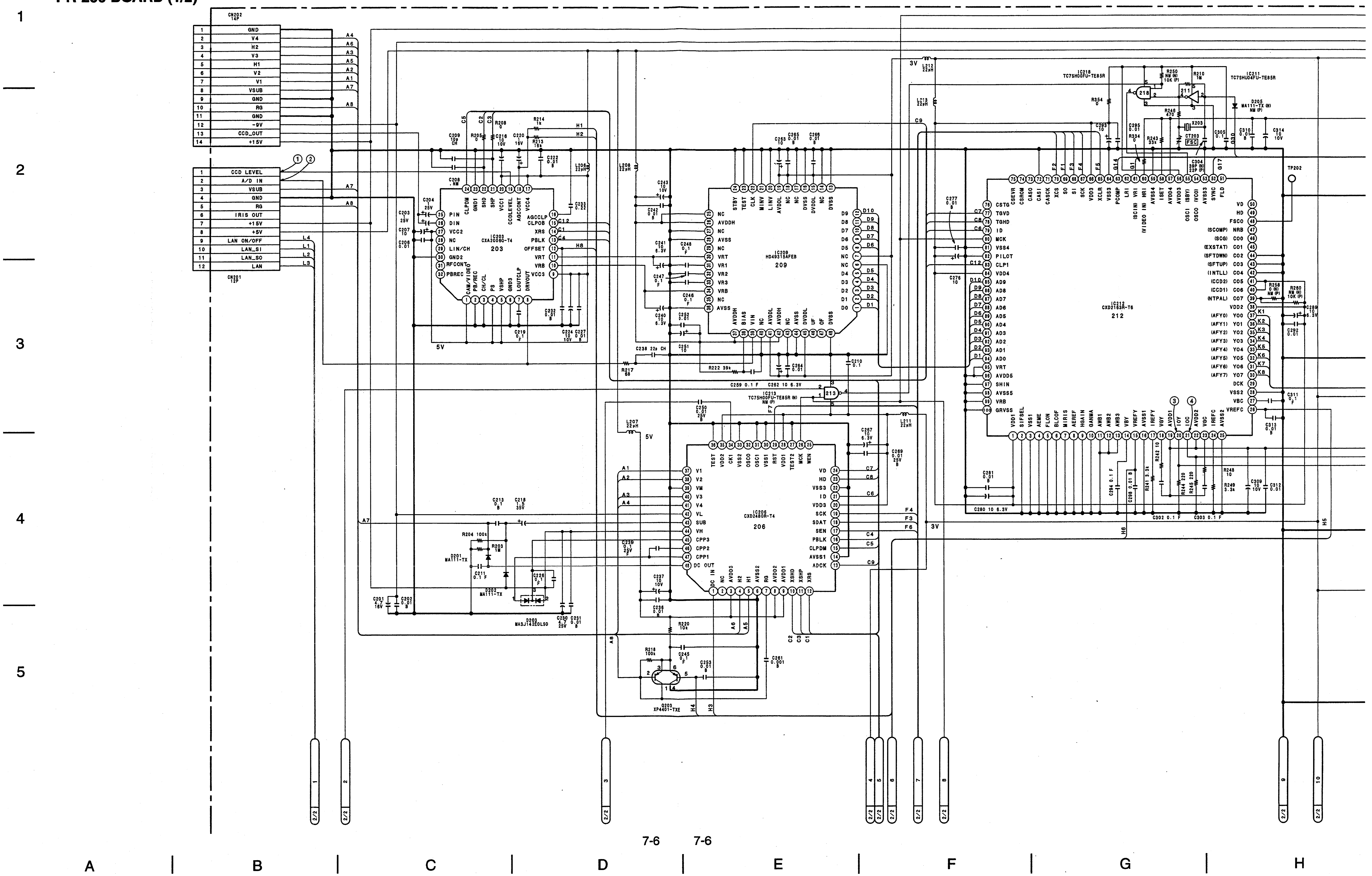
- Waveforms are taken with a oscilloscope.
- Circled numbers refer to waveforms.
- Waveforms are measured in condition below.

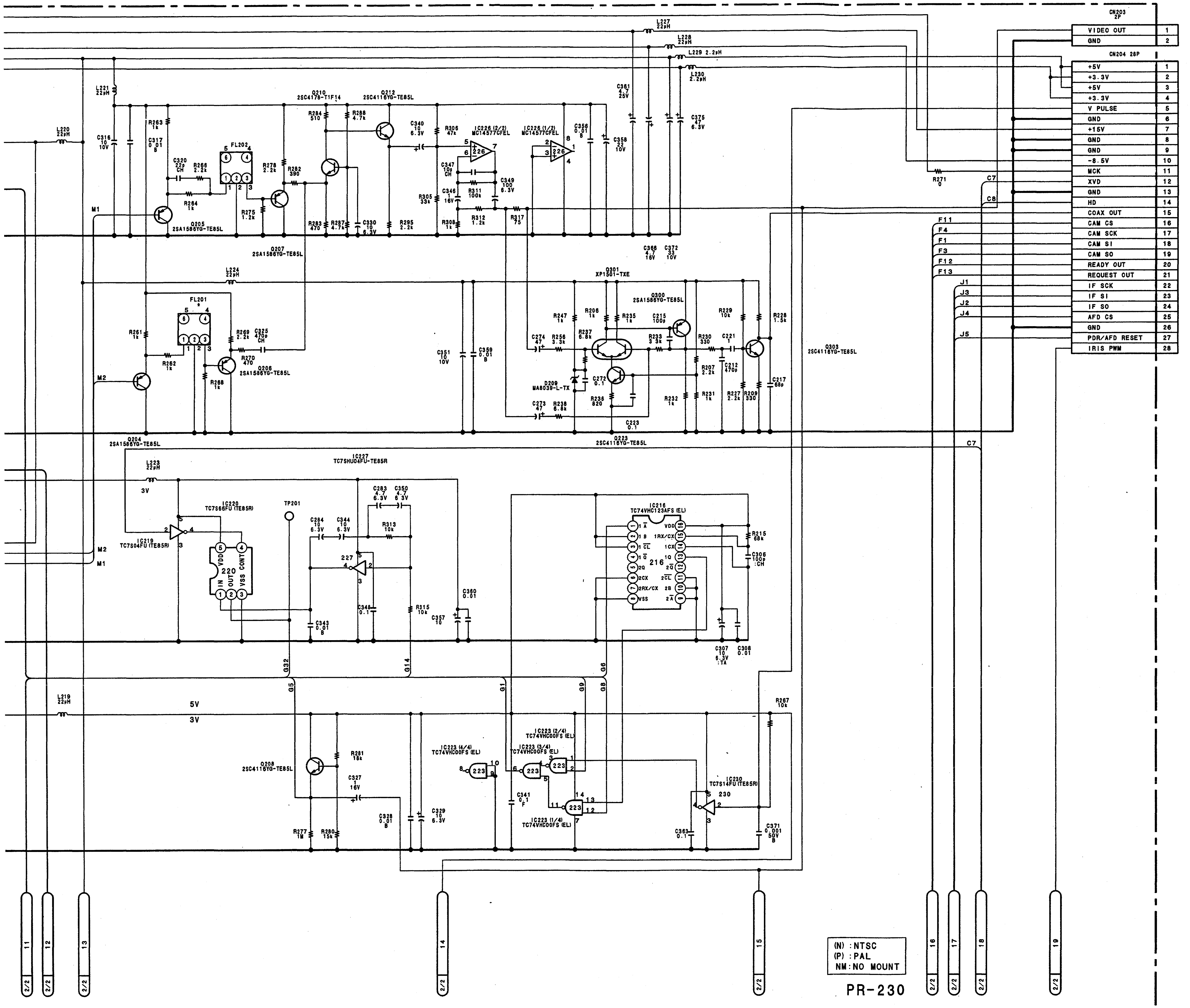




SSC-CX34/34P

PR-230 BOARD (1/2)

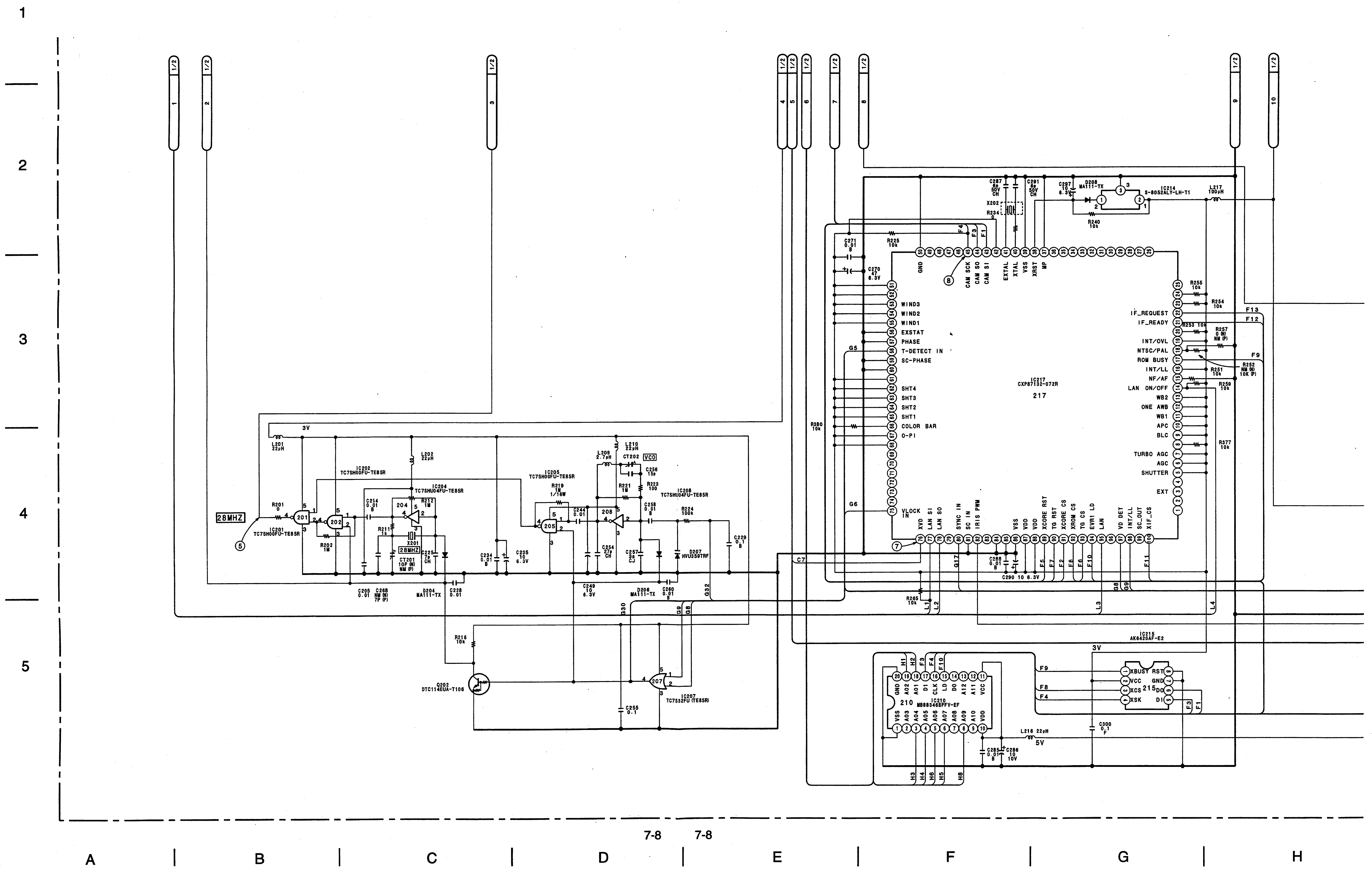

CN202 14P
1 GND
2 V4
3 H2
4 V3
5 H1
6 V2
7 V1
8 VSUB
9 GND
10 RG
11 GND
12 -9V
13 CCD_OUT
14 +15V
CN201 12P
1 CCD LEVEL
2 A/D IN
3 VSUB
4 GND
5 RG
6 IRIS OUT
7 +15V
8 +5V
9 LAN ON/OFF
10 LAN_SI
11 LAN_SO
12 LAN
IC203 CXA2006Q-T4 203
IC209 HD49315AFEB 209
IC206 CXD2480R-T4 206
IC212 CXD2163R-T6 212
IC213 TC7SH00FU-TE85R
IC218 TC7SH00FU-TE85R
IC211 TC7SH04FU-TE85R
Q203 XP4401-TXE
D201 MA111-TX
D202 MA111-TX
D203 MA3J142EGLSD
D205 MA111-TX
X203
TP202
3V
5V
1
2
3
4
5
A
B
C
D
E
F
G
H

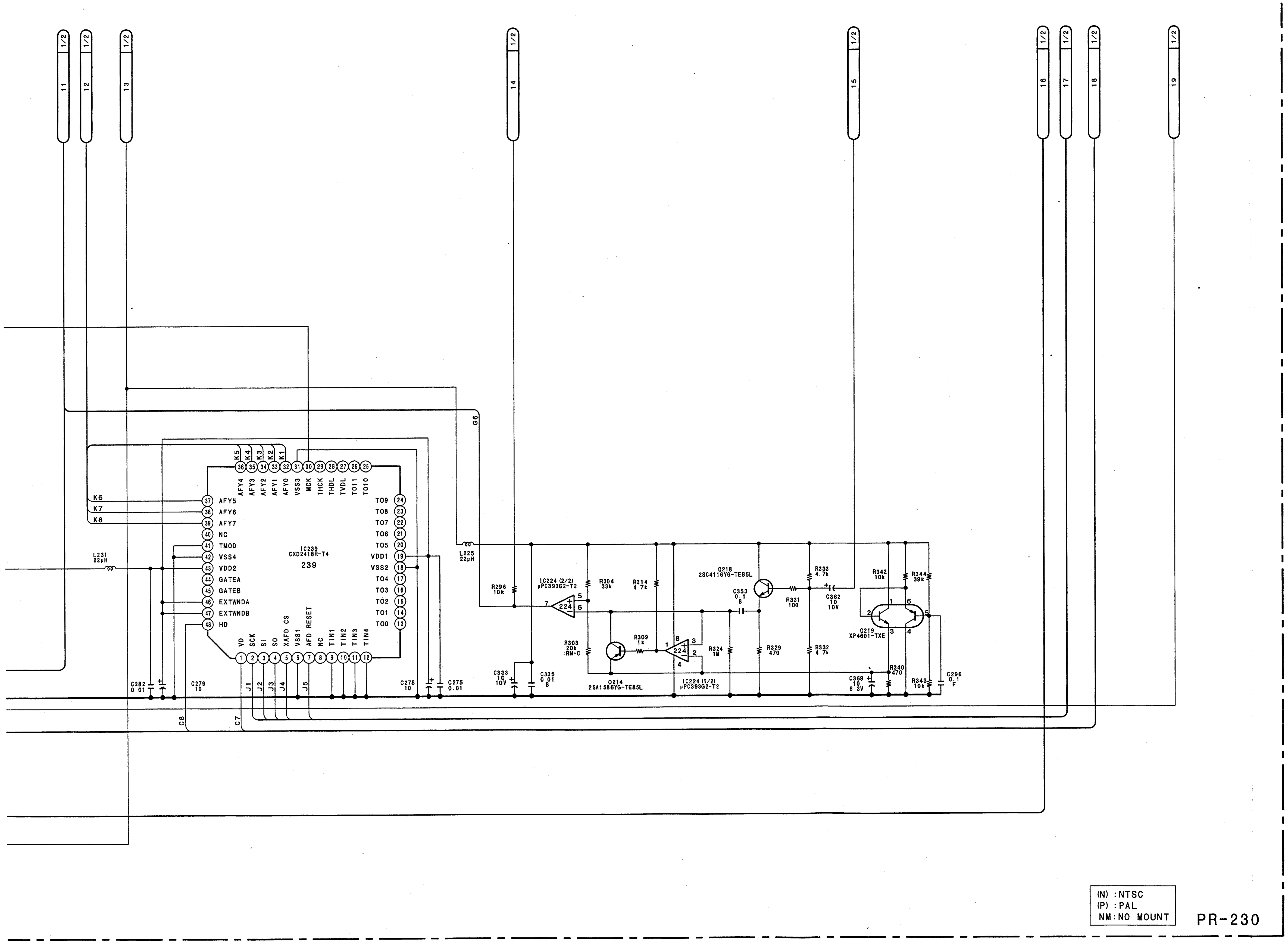

CN203 2P
VIDEO OUT 1
GND 2
CN204 28P
+5V 1
+3.3V 2
+5V 3
+3.3V 4
V PULSE 5
GND 6
+15V 7
GND 8
GND 9
-8.5V 10
MCK 11
XVD 12
GND 13
HD 14
COAX OUT 15
CAM CS 16
CAM SCK 17
CAM SI 18
CAM SO 19
READY OUT 20
REQUEST OUT 21
IF SCK 22
IF SI 23
IF SO 24
AFD CS 25
GND 26
PDR/AFD RESET 27
IRIS PWM 28
L227 22µH
L228 22µH
L229 2.2µH
L230 2.2µH
L221 22µH
L220 22µH
L224 22µH
L223 22µH
L219 22µH
Q210 2SC4178-T1F14
Q212 2SC4116YG-TE85L
Q205 2SA1586YG-TE85L
Q207 2SA1586YG-TE85L
Q206 2SA1586YG-TE85L
Q204 2SA1586YG-TE85L
Q301 XP1501-TXE
Q300 2SA1586YG-TE85L
Q303 2SC4116YG-TE85L
Q223 2SC4116YG-TE85L
Q208 2SC4116YG-TE85L
IC226 (2/2) MC14577CFEL
IC226 (1/2) MC14577CFEL
FL202
FL201
D209 MA8039-L-TX
IC227 TC7SHU04FU-TE85R
IC220 TC7S66FU (TE85R)
IC219 TC7S04FU (TE85R)
IC216 TC74VHC123AFS (EL)
IC223 (4/4) TC74VHC00FS (EL)
IC223 (3/4) TC74VHC00FS (EL)
IC223 (2/4) TC74VHC00FS (EL)
IC223 (1/4) TC74VHC00FS (EL)
IC230 TC7S14FU (TE85R)
TP201
R271 0
R267 10k
M1
M2
3V
5V
C7
C8
F11
F4
F1
F3
F12
F13
J1
J3
J2
J4
J5
G32
G5
G14
G1
G9
G8
G6
11 2/2
12 2/2
13 2/2
14 2/2
15 2/2
16 2/2
17 2/2
18 2/2
19 2/2
1
2
3
4
5
I
J
K
L
M
N
O
P

(N) : NTSC
(P) : PAL
NM : NO MOUNT

PR-230

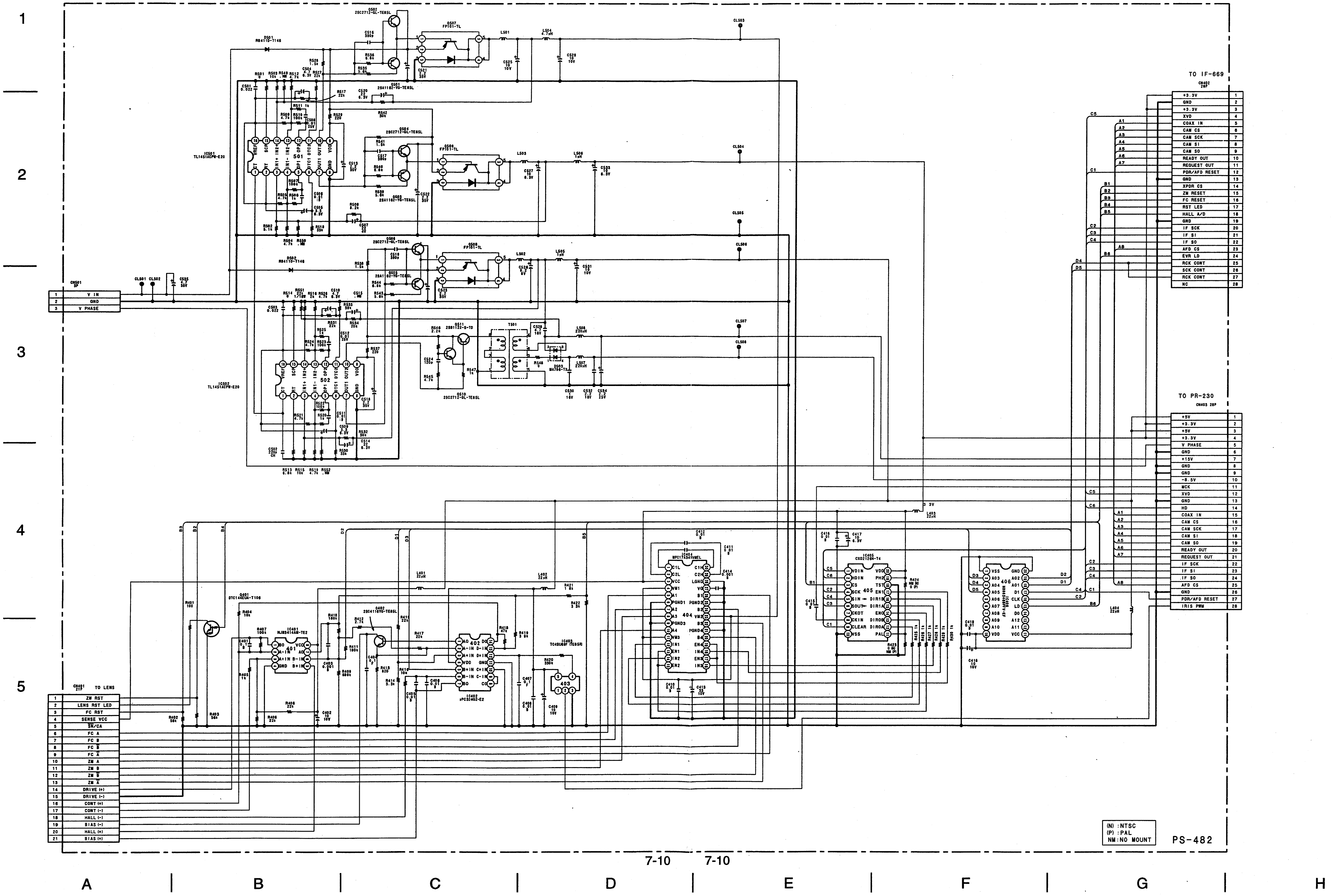
PR-230 BOARD (2/2)


1
2
3
4
5
A
B
C
D
E
F
G
H
1/2
3V
L201 22μH
IC202 TC7SH00FU-TE85R
L202 22μH
IC204 TC7SHU04FU-TE85R
IC205 TC7SH00FU-TE85R
R219 1M 1/16W
L209 2.7μH
L210 22μH
CT202 VCO
C256 15p
R221 1M
R223 100
IC208 TC7SHU04FU-TE85R
R224 100k
C258 0.01 B
28MHZ
R201 0
IC201 TC7SH00FU-TE85R
R202 1M
201
202
204
205
208
C214 0.01 B
R211 1k
R212 1M
X201 28MHZ
CT201 10P (N) NM (P)
C225 7P CH
C244 0.01
C254 27p CH
C257 3p CJ
D207 HVU359TRF
C229 0.1 B
C234 0.01 B
C235 10 6.3V
C205 0.01
C268 NM (N) 7P (P)
D204 MA111-TX
C228 0.01
C249 10 6.3V
D206 MA111-TX
C260 0.01 B
R216 10k
Q202 DTC114EUA-T106
IC207 TC7S32FU (TE85R)
207
C255 0.1
G30
G9
G8
G32
C7
G17
C287 8p 50V CH
C291 8p 50V CH
X202
R234 0
C297 10 6.3V
D208 MA111-TX
IC214 S-8052ALY-LH-T1
R240 10k
L217 100μH
C271 0.01 B
R225 10k
C270 47 6.3V
F4
F3
F1
GND
CAM SCK
CAM SO
CAM SI
EXTAL
XTAL
VSS
XRST
MP
WIND3
WIND2
WIND1
EXSTAT
PHASE
T-DETECT IN
SC-PHASE
G5
SHT4
SHT3
SHT2
SHT1
COLOR BAR
O-PI
R380 10k
G6
VLOCK IN
IC217 CXP87132-072R
217
IF_REQUEST
IF_READY
INT/OVL
NTSC/PAL
ROM BUSY
INT/LL
NF/AF
LAN ON/OFF
WB2
ONE AWB
WB1
APC
BLC
TURBO AGC
AGC
SHUTTER
EXT
R255 10k
R254 10k
R253 10k
R257 0 (N) NM (P)
R252 NM (N) 10K (P)
R251 10k
R259 10k
R377 10k
F13
F12
F9
XVD
LAN SI
LAN SO
SYNC IN
SC IN
IRIS PWM
VSS
VDD
VDD
XCORE RST
TG RST
XCORE CS
XROM CS
TG CS
EVRI LD
LAN
VD DET
INT/LL
SC_OUT
XIF_CS
C288 0.01 B
C290 10 6.3V
F5
F7
F2
F8
F6
F10
F11
G8
G9
R265 10k
L1
L2
L3
L4
IC215 AK6420AF-E2
3V
H1
H2
F3
F4
F10
GND
A02
A01
DI
CLK
LD
DO
A12
A11
VCC
210
IC210 MB88346BPFV-EF
VSS
A03
A04
A05
A06
A07
A08
A09
A10
VDD
F9
F8
F4
XBUSY
RST
VCC
GND
XCS
215
DO
XSK
DI
F3
F1
C300 0.1 F
L216 22μH
5V
C285 0.01 B
C286 10 10V
H3
H4
H6
H5
H8

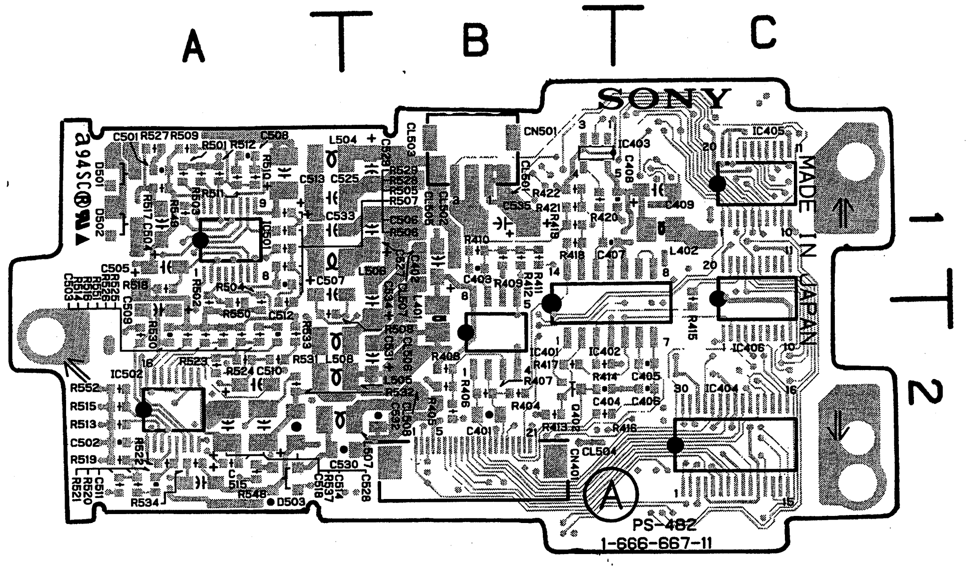

1/2 11
1/2 12
1/2 13
1/2 14
1/2 15
1/2 16
1/2 17
1/2 18
1/2 19
G6
K1
K2
K3
K4
K5
K6
K7
K8
IC239
CXD2418R-T4
239
AFY0
AFY1
AFY2
AFY3
AFY4
AFY5
AFY6
AFY7
VSS3
MCK
THCK
THDL
TVDL
TO11
TO10
TO9
TO8
TO7
TO6
TO5
VDD1
VSS2
TO4
TO3
TO2
TO1
TO0
NC
TMOD
VSS4
VDD2
GATEA
GATEB
EXTWNDA
EXTWNDB
HD
VD
SCK
SI
SO
XAFD CS
VSS1
AFD RESET
TIN1
TIN2
TIN3
TIN4
J1
J2
J3
J4
J5
C7
C8
L231
22μH
C282
0 01
C279
10
C278
10
C275
0.01
L225
22μH
R296
10k
IC224 (2/2)
μPC393G2-T2
224
R304
33k
R314
4 7k
R303
20k
:RN-C
Q214
2SA1586YG-TE85L
R309
1k
IC224 (1/2)
μPC393G2-T2
C333
10
10V
C335
0 01
B
R324
1M
Q218
2SC4116YG-TE85L
C353
0 1
B
R329
470
R331
100
R333
4.7k
C362
10
10V
R332
4 7k
R342
10k
R344
39k
Q219
XP4601-TXE
R340
470
C369
10
6 3V
R343
10k
C296
0 1
F
(N) : NTSC
(P) : PAL
NM : NO MOUNT
PR-230
1
2
3
4
5
I
J
K
L
M
N
O
P

SSC-CX34/34P

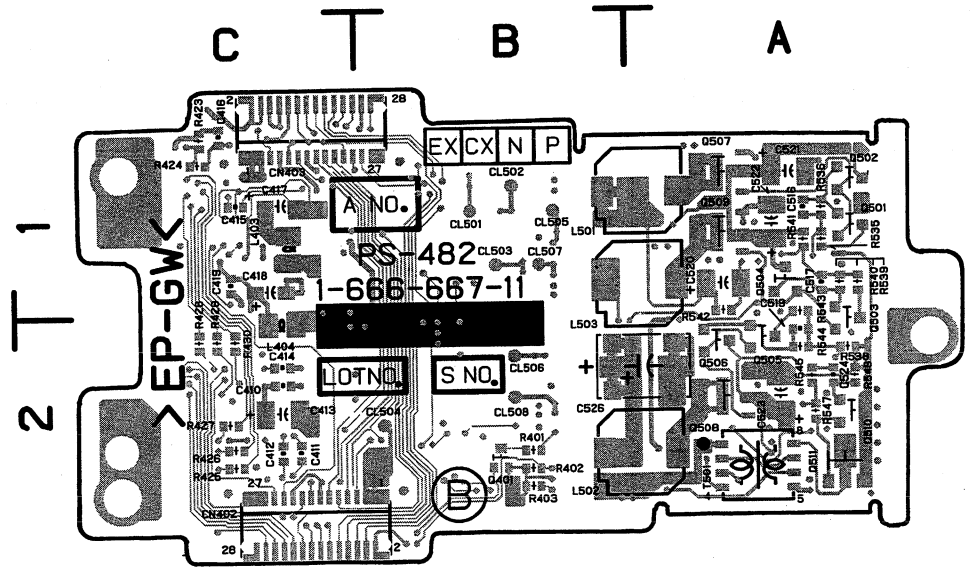
PS-482 BOARD


1
2
3
4
5
A
B
C
D
E
F
G
H
CN501 3P
V IN
GND
V PHASE
IC501 TL1451ACPW-E20
501
IC502 TL1451ACPW-E20
502
Q502 2SC2712-GL-TE85L
Q507 FP101-TL
D501 RB411D-T146
Q501 2SA1162-YG-TE85L
Q504 2SC2712-GL-TE85L
Q508 FP101-TL
Q503 2SA1162-YG-TE85L
Q506 2SC2712-GL-TE85L
Q509 FP101-TL
D502 RB411D-T146
Q505 2SA1162-YG-TE85L
Q511 2SB1122-S-TD
Q510 2SC2712-GL-TE85L
T501
D503 MA780-TX
CL501
CL502
CL503
CL504
CL505
CL506
CL507
CL508
TO IF-669
CN402 28P
1 +3.3V
2 GND
3 +3.3V
4 XVD
5 COAX IN
6 CAM CS
7 CAM SCK
8 CAM SI
9 CAM SO
10 READY OUT
11 REQUEST OUT
12 PDR/AFD RESET
13 GND
14 XPDR CS
15 ZM RESET
16 FC RESET
17 RST LED
18 HALL A/D
19 GND
20 IF SCK
21 IF SI
22 IF SO
23 AFD CS
24 EVR LD
25 RCK CONT
26 SCK CONT
27 RCK CONT
28 NC
TO PR-230
CN403 28P
1 +5V
2 +3.3V
3 +5V
4 +3.3V
5 V PHASE
6 GND
7 +15V
8 GND
9 GND
10 -8.5V
11 MCK
12 XVD
13 GND
14 HD
15 COAX IN
16 CAM CS
17 CAM SCK
18 CAM SI
19 CAM SO
20 READY OUT
21 REQUEST OUT
22 IF SCK
23 IF SI
24 .IF SO
25 AFD CS
26 GND
27 PDR/AFD RESET
28 IRIS PWM
CN401 21P TO LENS
1 ZM RST
2 LENS RST LED
3 FC RST
4 SENSE VCC
5 $\overline{SN}$/CA
6 FC A
7 FC B
8 FC $\overline{B}$
9 FC $\overline{A}$
10 ZM A
11 ZM B
12 ZM $\overline{B}$
13 ZM $\overline{A}$
14 DRIVE (+)
15 DRIVE (-)
16 CONT (+)
17 CONT (-)
18 HALL (-)
19 BIAS (-)
20 HALL (+)
21 BIAS (+)
Q401 DTC144EUA-T106
IC401 NJM3414AM-TE2
401
Q402 2SC4116YG-TE85L
IC402 μPC324G2-E2
402
IC403 TC4SU69F (TE85R)
403
IC404 MPC17A34RVMEL
404
IC405 CXD2126N-T4
405
IC406 MB88346BPFV-EF
406
L401 22μH
L402 22μH
L403 22μH
3.3V
(N) :NTSC
(P) :PAL
NM:NO MOUNT
PS-482

7-10


A
B
C
1
2
SONY
MADE IN JAPAN
Ⓐ
PS-482
1-666-667-11

PS-482 — A SIDE —
1-666-667-11

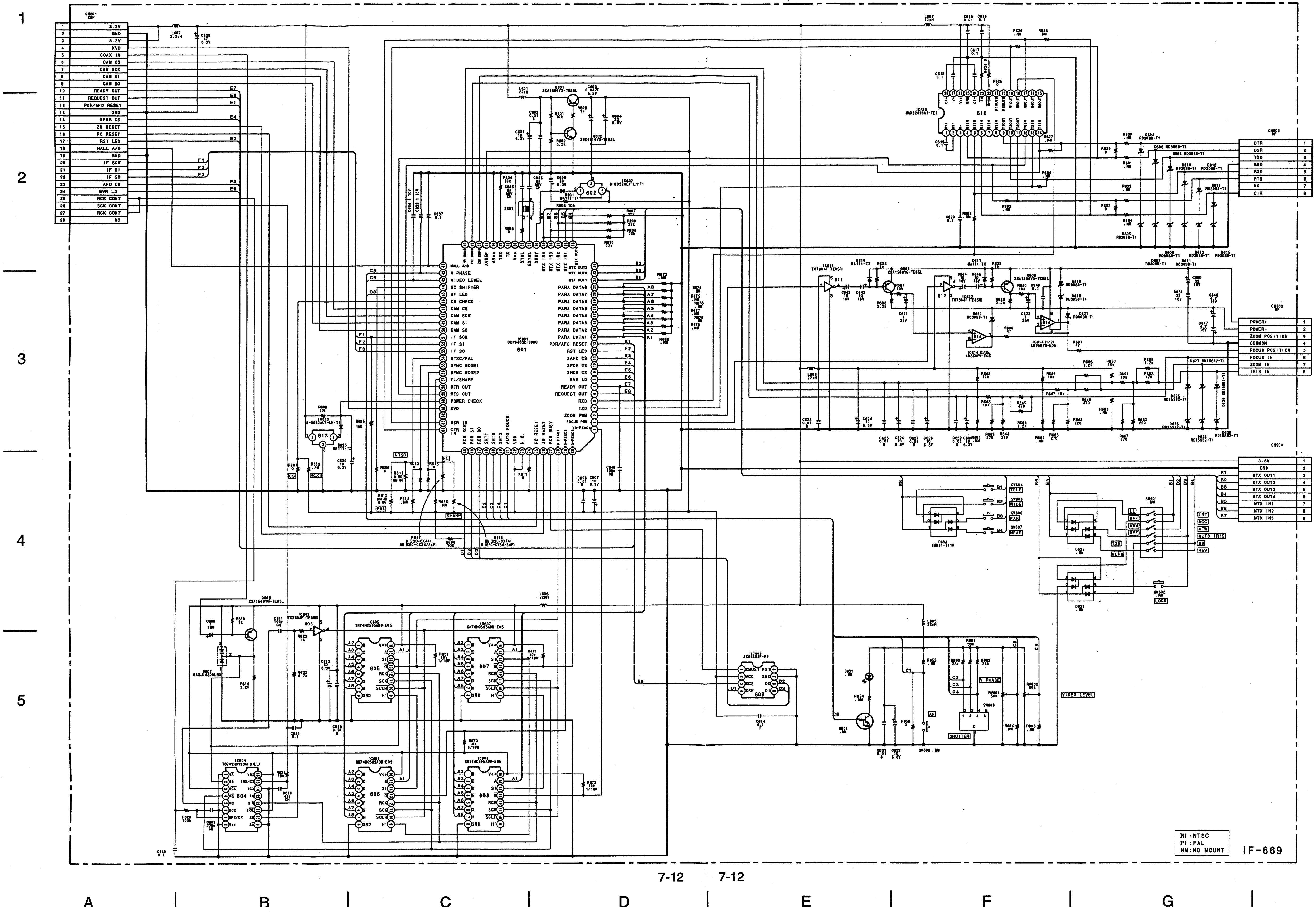

C
B
A
1
2
EX CX N P
A NO.
PS-482
1-666-667-11
LOT NO.
S NO.
EP-GW
Ⓑ

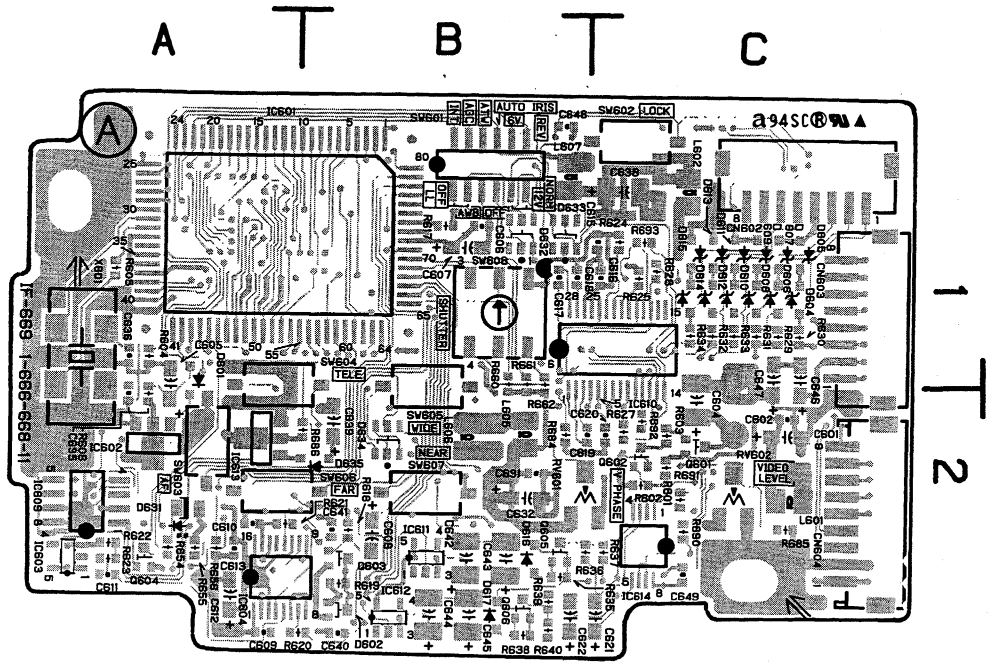
PS-482 — B SIDE —
1-666-667-11

PS-482
* : B SIDE

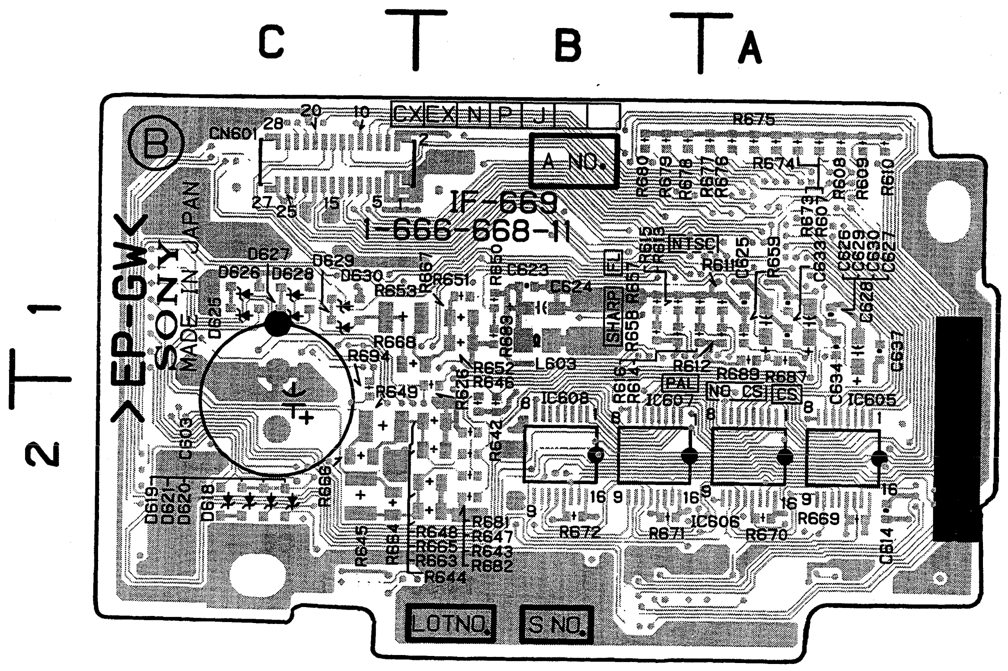
CN401	B2
CN402	*C2
CN403	*C1
CN501	B1
D501	A1
D502	A1
D503	A2
IC401	B2
IC402	B1
IC403	B1
IC404	C2
IC405	C1
IC406	C1
IC501	A1
IC502	A2
L401	B2
L402	C1
L403	*C1
L404	*C2
L501	*A1
L502	*A2
L503	*A1
L504	A1
L505	A2
L506	A1
L507	A2
L508	A2
Q401	*B2
Q402	B2
Q501	*A1
Q502	*A1
Q503	*A2
Q504	*A1
Q505	*A2
Q506	*A2
Q507	*A1
Q508	*A2
Q509	*A1
Q510	*A2
Q511	*A2
T501	*A2

IF-669 BOARD


1
2
3
4
5
A
B
C
D
E
F
G
H
CN601 28P
3.3V
GND
3.3V
XVD
COAX IN
CAM CS
CAM SCK
CAM SI
CAM SO
READY OUT
REQUEST OUT
PDR/AFD RESET
GND
XPDR CS
ZM RESET
FC RESET
RST LED
HALL A/D
GND
IF SCK
IF SI
IF SO
AFD CS
EVR LD
RCK CONT
SCK CONT
RCK CONT
NC
IC601 CXP84832-0080
601
IC610 MAX3241CAI-TE2
610
CN602 8P
DTR
DSR
TXD
GND
RXD
RTS
NC
CTR
CN603 8P
POWER+
POWER-
ZOOM POSITION
COMMON
FOCUS POSITION
FOCUS IN
ZOOM IN
IRIS IN
CN604
3.3V
GND
MTX OUT1
MTX OUT2
MTX OUT3
MTX OUT4
MTX IN1
MTX IN2
MTX IN3
IC605 SN74HC595ADB-E05
IC606 SN74HC595ADB-E05
IC607 SN74HC595ADB-E05
IC608 SN74HC595ADB-E05
IC604 TC74VHC123AFS(EL)
IC609 AK6440AF-E2
NTSC
PAL
SHARP
FL
CS
NO.CS
TELE
WIDE
FAR
NEAR
INT
AGC
ATW
AUTO IRIS
6V
REV
LL
OFF
AWB
OFF
12V
NORM
LOCK
V PHASE
VIDEO LEVEL
AF
SHUTTER
(N) :NTSC
(P) :PAL
NM:NO MOUNT
IF-669


A
B
C
1
2
IF-669 1-666-668-11
AUTO IRIS
LOCK
SHUTTER
TELE
VIDEO
NEAR
FAR
P.PHASE
VIDEO LEVEL

IF-669 — A SIDE —
1-666-668-11


C
B
A
1
2
CN601
IF-669
1-666-668-11
SONY
MADE IN JAPAN
EP-GW
A NO.
NTSC
SHARP
PAL
LOTNO.
S NO.

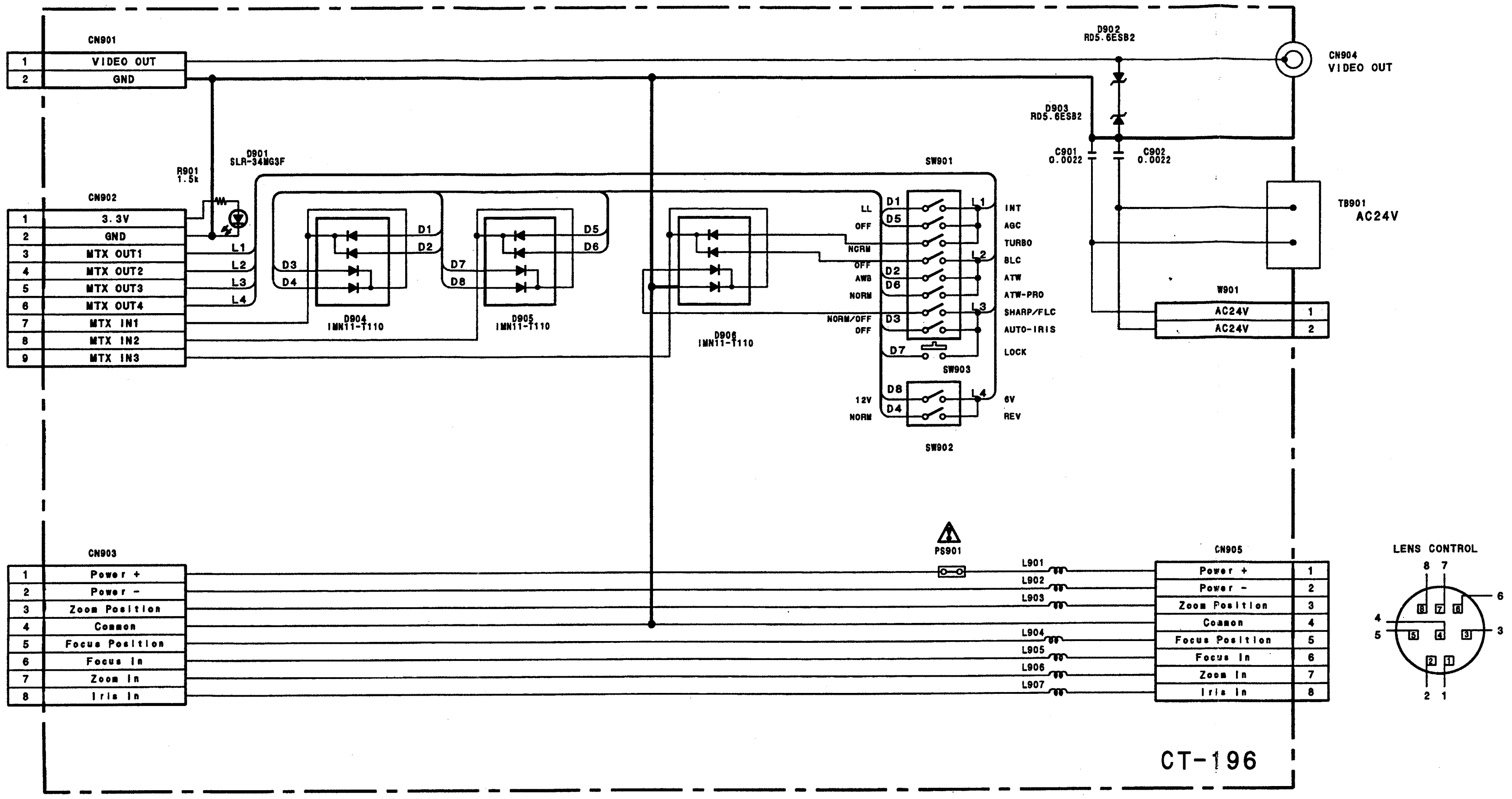
IF-669 — B SIDE —
1-666-668-11

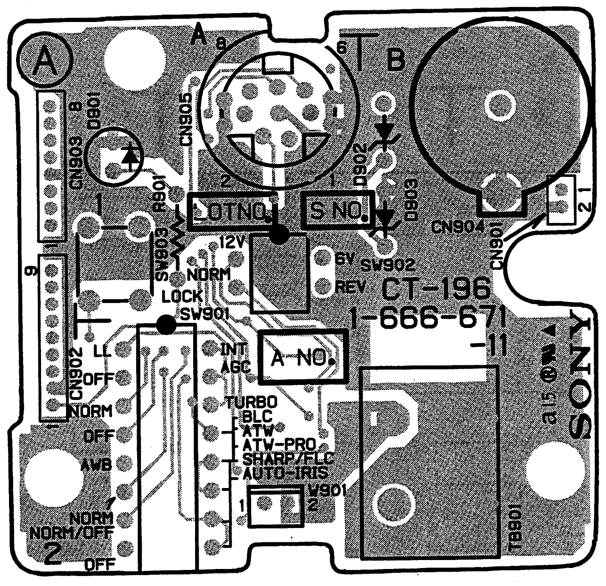
IF-669

* : B SIDE

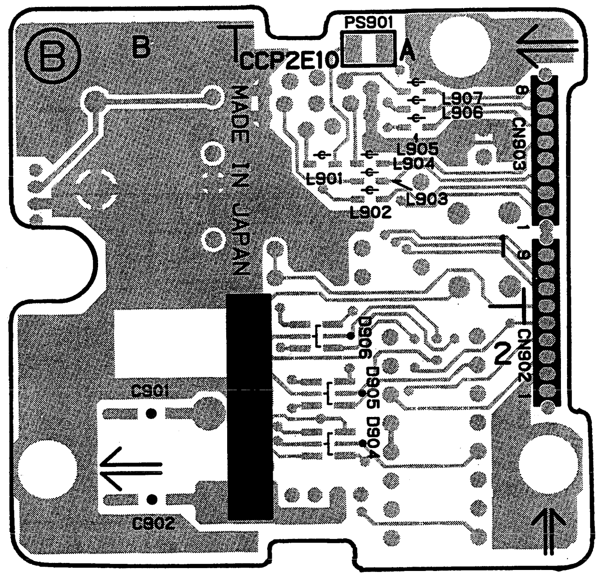
CN601	*C1
CN602	C1
CN603	C1
CN604	C2
D601	A1
D602	B2
D604	C1
D605	C1
D606	C1
D607	C1
D608	C1
D609	C1
D610	C1
D611	C1
D612	C1
D613	C1
D614	C1
D615	C1
D616	B2
D617	B2
D618	*C2
D619	*C2
D620	*C2
D621	*C2
D625	*C1
D626	*C1
D627	*C1
D628	*C1
D629	*C1
D630	*C1
D634	B2
D635	B2
IC601	A1
IC602	A2
IC603	A2
IC604	A2
IC605	*A2
IC606	*A2
IC607	*B2
IC608	*B2
IC609	A2
IC610	C1
IC611	B2
IC612	B2
IC613	A2
IC614	C2
L601	C2
L602	C1
L603	*B1
L605	B2
L606	B2
L607	B1
Q601	C2
Q602	C2
Q603	B2
Q605	B2
Q606	B2
RV601	B2
RV602	C2
SW604	A1
SW605	B1
SW606	A2
SW607	B2
SW608	B1
X601	A1

CT-196 BOARD


CN901
1 VIDEO OUT
2 GND
CN902
1 3.3V
2 GND
3 MTX OUT1
4 MTX OUT2
5 MTX OUT3
6 MTX OUT4
7 MTX IN1
8 MTX IN2
9 MTX IN3
R901 1.5k
D901 SLR-34MG3F
L1
L2
L3
L4
D1
D2
D3
D4
D5
D6
D7
D8
D904 IMN11-T110
D905 IMN11-T110
D906 IMN11-T110
D902 RD5.6ESB2
D903 RD5.6ESB2
CN904 VIDEO OUT
C901 0.0022
C902 0.0022
SW901
LL
OFF
NORM
OFF
AWB
NORM
NORM/OFF
OFF
INT
AGC
TURBO
BLC
ATW
ATW-PRO
SHARP/FLC
AUTO-IRIS
LOCK
SW903
12V
NORM
6V
REV
SW902
TB901 AC24V
W901
AC24V 1
AC24V 2
PS901
CN903
1 Power +
2 Power -
3 Zoom Position
4 Common
5 Focus Position
6 Focus In
7 Zoom In
8 Iris In
L901
L902
L903
L904
L905
L906
L907
CN905
Power + 1
Power - 2
Zoom Position 3
Common 4
Focus Position 5
Focus In 6
Zoom In 7
Iris In 8
CT-196
LENS CONTROL
8 7 6 4 5 3 2 1


A
B
CN903
D901
CN905
R901
D902
D903
DTNO.
S NO.
12V
6V
NORM
REV
SW902
SW903
LOCK
SW901
CT-196
1-666-671
-11
SONY
CN904
CN901
CN902
LL
OFF
NORM
OFF
AWB
NORM
NORM/OFF
OFF
INT
AGC
A NO.
TURBO
BLC
ATW
ATW-PRO
SHARP/FLC
AUTO-IRIS
W901
TB901

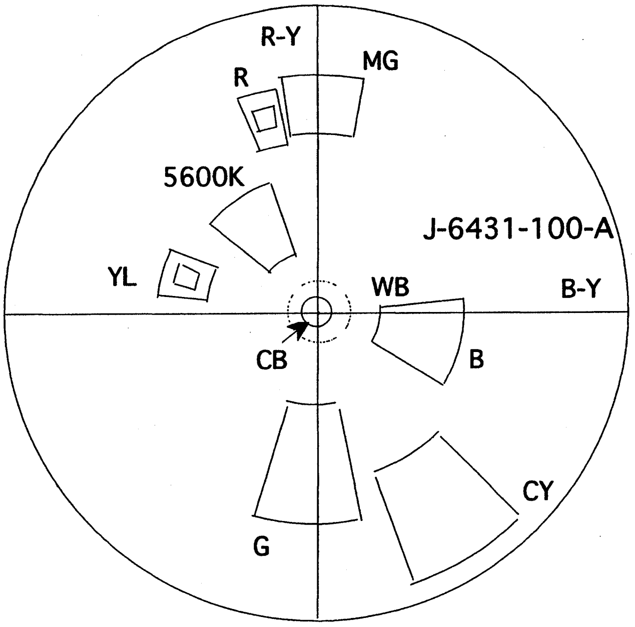
CT-196 — A SIDE —
1-666-671-11


B
PS901
CCP2E10
MADE IN JAPAN
L907
L906
L905
L904
L901
L903
L902
CN903
CN902
D906
D905
D904
C901
C902

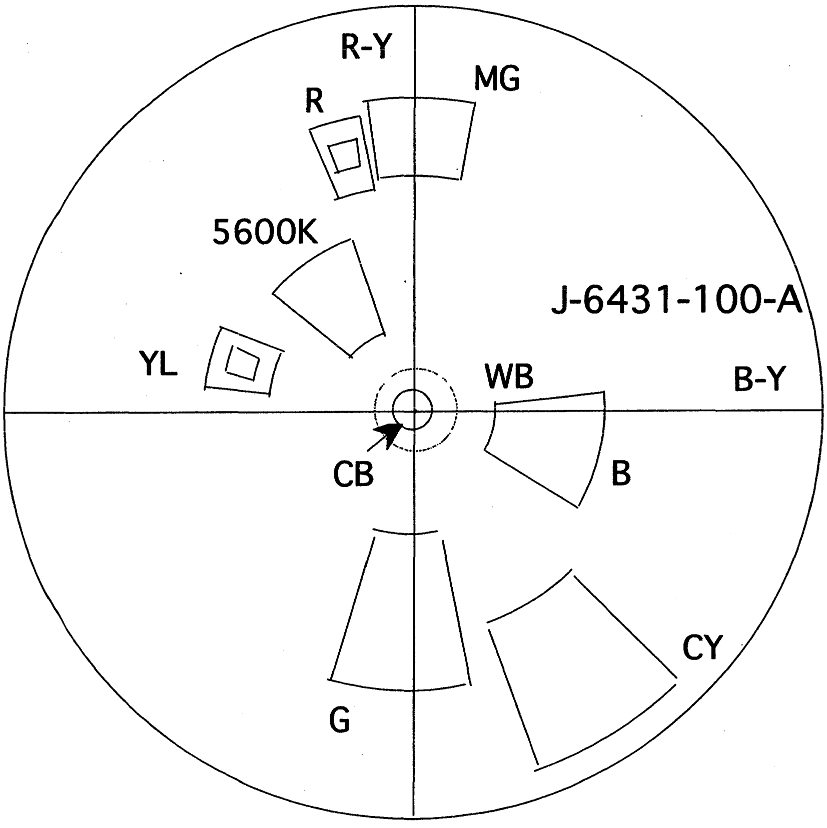
CT-196 — B SIDE —
1-666-671-11

VECTORSCOPE SCALE

DIAMETER 80mm


R-Y
MG
R
5600K
J-6431-100-A
YL
WB
B-Y
CB
B
CY
G

DIAMETER 106mm


R-Y
MG
R
5600K
J-6431-100-A
YL
WB
B-Y
CB
B
CY
G